# CITY OF SANDPOINT
# WAR MEMORIAL FIELD IMPROVEMENTS
# PHASE I

# PROJECT MANUAL

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|---|---|
| Bid Release: | Thursday, February 20, 2020 |
| Pre-Bid Conference: (Optional) | **Wednesday, February 26, 2020 at 2:00 p.m.**<br>City Hall, Council Chambers<br>1123 Lake Street<br>Sandpoint, Idaho 83864 |
| Bids Due: | **Tuesday, March 10, 2020**<br>No Later Than 2:00:00 p.m. Local Time |

City of Sandpoint
1123 Lake Street
Sandpoint, Idaho 83864
dtadic@sandpointidaho.gov
(208) 263-3577

SANDPOINT

# PROJECT MANUAL

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# WAR MEMORIAL FIELD IMPROVEMENTS
# PHASE I

## PROJECT MANUAL
## VOLUME I OF II

## BID AND CONTRACT DOCUMENTS

**FEBRUARY 2020**

# PART 1

# ADVERTISEMENT FOR BIDS

# ADVERTISEMENT FOR BIDS

Sealed bids will be received by the **City Clerk, City of Sandpoint, at City Hall, 1123 Lake Street in Sandpoint, Idaho 83864, until 2:00:00 p.m. local time on Tuesday, March 10, 2020** for War Memorial Field Improvements Phase I.

The project can be summarized to include a new field configuration with artificial turf surfacing and other related civil and electrical improvements at War Memorial Field in Sandpoint, Idaho. The work is generally described as follows: demolition, clearing and grubbing, excavation, cement treated base application, trenching and piping, backfill, grading, cast-in-place concrete, fencing, field lighting and associated electrical, artificial turf/drainage system and other features. One Bid Alternate is included in the Bidding Documents.

Proposals will be opened and publicly read at the above hour and date.

Plans, specifications, forms and other information are on file for examination at the following locations:

1. City of Sandpoint website: http://www.sandpointidaho.gov/doing-business/bids-and-rfps
2. Spokane Regional Plan Center, 209 N Havana St. (PO Box 2968) Spokane, WA 99202
3. Inland Northwest AGC, Abadan Online Planroom: http://www.abadanplanroom.com/
4. Builders Exchange of Washington, Inc. On-Line Plan Center: http://bxwa.com/

There will be a Pre-Bid Conference on **Wednesday, February 26, 2020**, beginning at **2:00 pm**, prevailing local time, at **City Hall, Council Chambers, 1123 Lake Street, Sandpoint, Idaho.** Bidders are encouraged to attend. Attendance is optional.

A bid bond in the amount of 5% of the total bid amount, including any additive alternates, is required. A Public Works Contractor License for the State of Idaho is required to bid this work. Disadvantaged Business Enterprises are encouraged to submit bids.

Estimated Cost: **$2,000,000 - $4,000,000**.

Amanda Wilson, Infrastructure & Development Services Manager

END OF ADVERTISEMENT

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Publish: Bonner County Daily Bee – February 20 & February 26, 2020

# PART 2

# INSTRUCTIONS TO BIDDERS

# ISPWC - BIDDER'S CHECK LIST

The Bidder's Check List is offered to assist the prospective bidder in checking his/her Bid. This checklist does not relieve the bidder from properly completing his/her Bid.

Check off when completed:

1._____ Are all blank spaces filled out on Bid Form?

2._____ Have questions arising from the bidding, contract, specifications or plans been submitted to the proper authority and resolved in the proper manner?

3._____ Are Bid amounts shown correctly as well as extensions and totals? Recheck for errors or omissions.

4._____ Are authorized signatures properly affixed to the Bid form, giving also title, and Idaho Public Works Contractor license number, evidence of authority to sign, etc.?

5. _____Have all plumbing, heating, air conditioning and electrical subcontractors to whom work will be awarded been listed, as well as their Idaho Public Works Contractor license number?

6._____ Have all Addenda been received and acknowledged with the proper signature on the Bid Form?

7._____ In order for a Bid to be considered, the Bid form, Bid Security, naming of subcontractors form, and other required attachments must be placed in a properly addressed sealed envelope and delivered to the specified authority prior to the time designated for the bid opening.

8._____ Has Bid Security been enclosed?

9.____ Has Bidder performed examinations in accordance with the Instructions to Bidders?

10.____ Has Bidder included additional information required in Article 15 of the Instructions to Bidders?

# INSTRUCTIONS TO BIDDERS

## ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

B. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

C. *Bidder*—The individual or entity who submits a Bid directly to Owner.

D. *Bidding Documents*—The Instructions to Bidders and the proposed Contract Documents (including all Addenda).

E. *Project Manual* – The complete set of Bidding Documents submitted by the City for this bid.

## ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office, City of Sandpoint, website at: http://www.sandpointidaho.gov/doing-business/bids-and-rfps or at the other locations identified in the Advertisement for Bids.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; Owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

## ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder's Idaho Public Works Contractor License No. shall be shown on the Bid Form.

3.02 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

3.03 Idaho Code 54-1902 requires Bidder and subcontractors to have the appropriate Public Works Contractor's License to submit a Bid for this project.

## ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.02 It is the responsibility of each Bidder before submitting a Bid to:

A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;

B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;

D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Supplementary Conditions as containing reliable "technical data";

E. consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs;

F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. promptly give Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Owner is acceptable to Bidder; and

I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.03 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Owner written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Owner are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

## ARTICLE 5 – PRE-BID CONFERENCE

5.01 There will be a Pre-Bid conference for this project on Wednesday, February 26, 2020 at 2:00 PM at City Hall, Council Chambers, 1123 Lake Street, Sandpoint, Idaho 83864. Bidders are encouraged to attend. Attendance is not mandatory.

## ARTICLE 6 – SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

## ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Owner in writing. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda. The deadline for bidder questions is **three** days prior to Bid Opening. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Bernardo Wills Architects.

7.03 Bidders may **only contact** the City of Sandpoint City Engineer, Dan Tadic with any questions at dtadic@sandpointidaho.gov or (208) 263-3577.

## ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of the total Base *Bid Schedule A – Base Bid* price amount, excluding Alternates, by certified check, cashier's check, or a Bid bond (on the form attached) issued by a surety meeting the requirements of the Bidding Documents.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

8.03 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

## ARTICLE 9 – SUBSTITUTE AND "OR-EQUAL" ITEMS

9.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or those substitute or "or-equal" materials and equipment approved by Owner and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. No item of material or equipment will be considered by Owner as a substitute or "or-equal" unless written request for approval has been submitted by Bidder and has been received by Owner at least 5 days prior to the date for receipt of Bids. Each such request shall

conform to the requirements of the Bidding Documents. The burden of proof of the merit of the proposed item is upon Bidder. Owner's decision of approval or disapproval of a proposed item will be final. If Owner approves any proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

## ARTICLE 10 – SUBCONTRACTORS, SUPPLIERS AND OTHERS

10.01 Per Idaho Code 67-2310, Bidder shall include in his/her Bid the name, or names and address, or addresses, and Idaho Public Works Contractor License numbers of the Subcontractors who shall, in the event the Bidder secures the Contract, subcontract the plumbing, heating and air-conditioning work, and electrical work under the general Contract. Failure to name Subcontractors as required by this section shall render any Bid submitted by the Bidder unresponsive and void. Use naming of subcontractors form 00440.

## ARTICLE 11 – PREPARATION OF BID

11.01 The Bid Form is included with the Bidding Documents.

11.02 All blanks on the Bid Form shall be completed in ink and the Bid Form signed. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item listed therein.

11.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.

11.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.

11.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

11.06 A Bid by an individual shall show the Bidder's name and official address.

11.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown. Include evidence of authority to sign.

11.08 All names shall be printed in ink below the signatures**.**

11.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

11.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

11.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in Idaho. Bidder's Idaho Public Works Contractor License Number shall also be shown on the Bid Form.

11.12 Bidder must possess a valid City of Sandpoint Business License prior to award of the Contract.

11.13 There is no "Buy America" requirement for this project.

11.14 There is no Federal prevailing wage requirement for this project.

## ARTICLE 12 – BASIS OF BID; COMPARISON OF BIDS

12.01 *Lump Sum*

A. Not Used.

12.02 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

## ARTICLE 13 – SUBMITTAL OF BID

13.01 With each copy of the Bidding Documents, a Bidder is furnished one bound copy of the Bid Form, and the Bid Bond Form. The Bid Form is to be completed and submitted with the Bid security and the following documents:

A. Submit documents as required by the Bid Form.

13.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.” A mailed Bid shall be addressed to City Clerk, City of Sandpoint, 1123 Lake Street, Sandpoint, ID 83864. It is the Bidder’s sole responsibility to ensure that its Bid is delivered to the location of the Bid opening at the appointed place and time.

13.03 The Bidding Documents on this project require the Bidder to submit a Bid composed of the following parts: Bid Schedule A – Base Bid and Bid Schedule B - Alternate #1..

A. The Base Bid includes all items that do not change as to quantity, dimension, or type of construction regardless of the Alternative being awarded.

B. The Alternate contains all items which change as to quantity, dimension, or construction method, depending on which alternative(s) is awarded.

C. The Alternate is described on the Bid Form and the Bidding Documents.

D. The Bidder shall submit a price on each and every item of work included in the Base Bid. The Bidder shall also submit prices on each and every item under the Alternate.

E. The Alternate may be awarded if in the best interest of the City of Sandpoint. The Owner reserves the right to award or not award the Alternate.

## ARTICLE 14 – MODIFICATION AND WITHDRAWAL OF BID

14.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

14.02 Relief from Bids. (a) If an awarding authority for the public entity determines that a Bidder is entitled to relief from a Bid because of mistake, the authority shall prepare a report in writing to document the facts establishing the existence of each element required in Section 54-1904C, Idaho Code. The report shall be available for inspection as a public record and shall be filed with the public entity soliciting bids. (b) A Bidder claiming a mistake satisfying all the conditions of Section 54-1904C, Idaho Code, shall be entitled to relief from the Bid and have any Bid Security returned by the public entity. Bidders not satisfying the conditions found in Section 54-1904C, Idaho Code, shall forfeit any Bid Security. Bidders failing to execute a Contract and not satisfying the conditions of a mistake shall also forfeit any Bid Security.

14.03 Grounds for Relief. The Bidder shall establish to the satisfaction of the public entity that:

a) A clerical or mathematical mistake was made;

b) The Bidder gave the public entity written notice within five (5) calendar days after the opening of the bids of the mistake, specifying in the notice in detail how the mistake occurred; and

c) The mistake was material.

## ARTICLE 15 – OPENING OF BIDS

15.01 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Base Bids and Alternates will be made available to Bidders after the opening of Bids.

## ARTICLE 16 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

16.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

## ARTICLE 17 – EVALUATION OF BIDS AND AWARD OF CONTRACT

17.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids.

17.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

17.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

17.04 In evaluating Bids, Owner will consider if Bidder holds the requisite Public Works Contractor's License.

17.05 If the Contract is to be awarded, Owner will award the Contract to the qualified Bidder submitting the lowest responsive Bid. The lowest responsive Bid will be determined by the Owner based upon the combination of Base Bid and Additive Alternate(s) that is in the best interest of the City of Sandpoint.

17.06 The anticipated schedule for this project is as follows:

Bids Due, Bid Opening – March 10, 2020

Anticipated Notice of Intent to Award – March 11, 2020

Anticipated City Council Approval – March 18, 2020

Anticipated Award Date and Notice to Proceed – March 20, 2020

Authorization to begin Work on the Site – April 1, 2020

Substantial Completion – July 21, 2020

Final Completion – July 30, 2020

## ARTICLE 18 – CONTRACT SECURITY AND INSURANCE

18.01 The General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

## ARTICLE 19 – SIGNING OF AGREEMENT

19.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within five days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within five days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder.

## ARTICLE 20 – SALES AND USE TAXES

20.01 Refer to the Bidding Documents for tax requirements. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the State of Idaho which are applicable during the performance of the Work.

## ARTICLE 21 – PROTESTS TO OWNER

21.01 Prior to a submission of a protest relating to or arising from the solicitation for Bids, all parties shall use their best efforts to resolve concerns raised by an interested party through open and frank discussions.

21.02 Protests shall be concise and logically presented to facilitate review by the Owner. Failure to substantially comply with any of the requirements of Paragraph 21.03 of this section may be grounds for dismissal of the protest.

21.03 Protests shall include the following information:

A. Name, address and fax and telephone numbers of the protester;
B. Solicitation or contract number;

C. Detailed statement of the legal and factual grounds for the protest, to include a description of resulting prejudice to the protester;
D. Copies of relevant documents;
E. Request for a ruling by the Owner;
F. Statement as to the form of relief requested;
G. All information establishing that the protester is an interested party for the purpose of filing a protest; and
H. All information establishing the timeliness of the protest.

21.04 All protests filed directly with the Owner will be addressed to the manager of Owner or other official designated to receive protests.

21.05 Protests based on alleged apparent improprieties in the Bidding Documents and solicitation procedures or evaluation and award criteria shall be filed at least ten (10) calendar days before the proposal submittal date. Failure to promptly file a protest based on solicitation procedures or evaluation and award criteria shall be deemed a waiver of the right to pursue a protest. In all other cases, protests shall be filed no later than five (5) calendar days after the basis of protest is known or should have been known, whichever is earlier, but no later than ten (10) days after the proposal due date.

21.06 Action upon receipt of protest.

A. Upon receipt of a protest before award, a contract may not be awarded, pending resolution of the protest, unless contract award is justified, in writing, to be in the best interest of the Owner.

B. If award is withheld pending Owner resolution of the protest, the Owner will inform the proposers whose proposals might become eligible for award of the contract. If appropriate, the proposers will be requested, before expiration of the time for acceptance of their proposals, to extend the time for acceptance to avoid the need for resolicitation. In the event of failure to obtain such extension of time, consideration should be given to proceeding with award pursuant to paragraph 25.06.A.

C. Upon receipt of a protest within ten (10) days after contract award, the Owner shall immediately suspend performance, pending resolution of the protest, including any review by an independent higher level official, unless continued performance is justified, in writing, for urgent and compelling reasons or is determined, in writing, to be in the best interest of the Owner.

D. Pursuing an Owner protest does not extend the time of obtaining a judicial stay, injunction or other remedy.

E. The Owner shall make its best efforts to resolve protests within 20 days after the protest is filed. To the extent permitted by law and regulation, the parties may exchange relevant information.

F. Owner protest decisions shall be well-reasoned, and explain the Owner's position. The protest decision shall be provided to the protestor using a method that provides evidence of receipt.

# PART 3

# BID PACKAGE

# BID FORM
# City of Sandpoint
# War Memorial Field Improvements, Phase I

## ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

City of Sandpoint
1123 Lake Street
Sandpoint, ID 83864

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

## ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Advertisement, Instructions to Bidders, and Bidding Documents, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

## ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

| Addendum No. | Addendum Date |
|---|---|
| | |
| | |
| | |

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-5.03 as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-5.06 as containing reliable "technical data."

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such

information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.

F. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, test, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder safety precautions and programs incident thereto.

G. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

H. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

I. Bidder has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Owner is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

## ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

## ARTICLE 5 – BASIS OF BID

Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

| Item No. | Description | Unit | Estimated Quantity | Bid Unit Price | Bid Price |
|---|---|---|---|---|---|
| 2010.4.1.A.1. | Mobilization | LS | 1 | **LUMP SUM** | $ _____ |
| 1103.4.1.A.1 | Traffic Control | LS | 1 | **LUMP SUM** | $ _____ |
| 1001.4.1.A.1 | Construction Site Management | LS | 1 | **LUMP SUM** | $ _____ |
| 201.4.1.C.1 | Removal of Obstructions | LS | 1 | **LUMP SUM** | $ _____ |
| 201.4.1.E.1 | Remove Existing Chain-link Fencing | LF | 150 | $ _____ | $ _____ |
| 201.4.1.D.1 | Removal of Existing Asphalt | SY | 180 | $ _____ | $ _____ |
| 201.4.1.A.1 | Clearing and Grubbing – (8-Inch) Depth | CY | 3,850 | $ _____ | $ _____ |
| 202.4.1.E.1 | Excavation & Haul Offsite | CY | 7,000 | $ _____ | $ _____ |
| 202.4.1.F.1 | Unsuitable Material Excavation & Haul Offsite | CY | 1,000 | $ _____ | $ _____ |
| 202.4.1.G.1 | Field Rough Grading / CTB Prep | SY | 16,500 | $ _____ | $ _____ |
| 202.4.6.A.1 | Borrow | CY | 1,200 | $ _____ | $ _____ |
| 801.4.1.A.1 | 1-inch Minus Uncrushed Aggregate Base | CY | 1,200 | $ _____ | $ _____ |

| | | | | | |
|---|---|---|---|---|---|
| 303.4.1.A.1 | Exploratory Excavation (Non-Groundwater) | HR | 16 | $ _____ | $ _____ |
| 401.4.1.C.1 | Water Service Line (2-inch) HDPE | LF | 850 | $ _____ | $ _____ |
| 601.4.1.A.1 | (18-Inch) Storm Drain, PS46 ASTM F679 | LF | 245 | $ _____ | $ _____ |
| 602.4.1.A.1 | Storm Drain Manhole | EA | 1 | $ _____ | $ _____ |
| 704.4.1.F.1 | Precast Concrete Stormwater Outfall | EA | 1 | $ _____ | $ _____ |
| 810.4.1.A.3a | Plant Mix Pavement, 2-Inch Thickness (Includes Base) | SY | 330 | $ _____ | $ _____ |
| 810.4.1.A.3b | Plant Mix Pavement, 4-Inch Thickness (Includes Base) | SY | 30 | $ _____ | $ _____ |
| 1006.4.1.B.1 | Riprap Slope & Outlet Protection | SY | 25 | $ _____ | $ _____ |
| 1104.4.1.A.2 | Install Painted Pavement Markings | LS | 1 | $ _____ | $ _____ |
| SP2.4.1.A.1 | Portland Cement for Cement Treated Base | TON | 610 | $ _____ | $ _____ |
| SP2.4.1.B.1 | Cement Treated Base (CTB) | SY | 16,500 | $ _____ | $ _____ |
| SP3.4.1.A.1 | Synthetic Turf – Base Course | CY | 6,160 | $ _____ | $ _____ |
| SP3.4.1.B.1 | Synthetic Turf – Top Course | CY | 1,230 | $ _____ | $ _____ |
| SP3.4.1.C.1 | Field Drain Pipe – (12-Inch) Perforated Flat Drain | LF | 9,810 | $ _____ | $ _____ |
| SP3.4.1.D.1 | Field Drain Pipe – (12-Inch) Perforated Pipe | LF | 315 | $ _____ | $ _____ |
| SP3.4.1.E.1 | Field Drain Pipe – (18-Inch) Perforated Pipe | LF | 395 | $ _____ | $ _____ |
| SP3.4.1.F.1 | Field Drain Basin | EA | 1 | $ _____ | $ _____ |

| | | | | | |
|---|---|---|---|---|---|
| 705.4.1.A.1 | Concrete Flatwork Pavement, (4-inch) Thickness | SF | 160 | $ _____ | $ _____ |
| 703.4.1.D | Install Concrete Footing for Future Phase II Dugout Construction | EA | 4 | $ _____ | $ _____ |
| 703.4.1.E.1 | Install Turf Edge - Type I | LF | 30 | $ _____ | $ _____ |
| 703.4.1.F.1 | Install Turf Edge – Type II | LF | 585 | $ _____ | $ _____ |
| 703.4.1.G.1 | Install Turf Edge – Type III | LF | 200 | $ _____ | $ _____ |
| 703.4.1.H.1 | Install Turf Edge – Type V | LF | 60 | $ _____ | $ _____ |
| 703.4.1.I.1 | Install Turf Edge – Type VI | LF | 165 | $ _____ | $ _____ |
| 703.4.1.J.1 | Install Turf Edge – Type VII | LF | 65 | $ _____ | $ _____ |
| SP7.4.1.A.1 | Install Festival Tent Anchors w/ Helical Piers & Access Box | EA | 6 | $ _____ | $ _____ |
| 704.4.1.E | Construct Precast Festival Tent Concrete Ballast Weights | EA | 22 | $ _____ | $ _____ |
| SP8.4.1.A | Install (2-Inch) Irrigation System Point-of-Connection (P.O.C.) | LS | 1 | $ _____ | $ _____ |
| SP8.4.2.A | Install (2-Inch) Irrigation Mainline | LF | 1,560 | $ _____ | $ _____ |
| SP8.4.3.A | Install (6-Inch) PVC Irrigation Sleeve | LF | 20 | $ _____ | $ _____ |
| SP8.4.4.A | Install Quick Coupler w/ Turf Box | EA | 10 | $ _____ | $ _____ |
| SP8.4.5.A | Install Isolation Valve w/ Turf Box | EA | 5 | $ _____ | $ _____ |
| SP8.4.6.A | Re-Connect Existing Irrigation Circuit Piping | LS | 1 | $ _____ | $ _____ |
| SP4.4.1.A.1 | Install Synthetic Turf System | SF | 144,200 | $ _____ | $ _____ |

| | | | | | |
|---|---|---|---|---|---|
| SP6.4.1.A | 6ft Ht. Galvanized Chain-link Fence | LF | 24 | $ _____ | $ _____ |
| SP6.4.2.A | 8ft Ht. Galvanized Chain-link Fence | LF | 370 | $ _____ | $ _____ |
| SP6.4.3.A | 12ft Ht. Galvanized Chain-link Fence | LF | 175 | $ _____ | $ _____ |
| SP6.4.4.A | 6ft Ht. x 16ft Wide Double Swing Chain-link Gate | EA | 1 | $ _____ | $ _____ |
| SP6.4.5.A | 8ft Ht. x 4ft Wide Single Swing Chain-link Gate | EA | 3 | $ _____ | $ _____ |
| SP6.4.6.A | 8ft Ht. x 14ft Wide Double Swing Chain-link Gate | EA | 1 | $ _____ | $ _____ |
| SP6.4.7.A | 8ft Ht. x 8ft Wide Double Swing Chain-link Gate | EA | 2 | $ _____ | $ _____ |
| SP6.4.8.A | 12ft Ht. x 14ft Wide Double Swing Chain-link Gate | EA | 1 | $ _____ | $ _____ |
| SP6.4.9.A | 12ft Ht. x 4ft Wide Single Swing Chain-link Gate | EA | 1 | $ _____ | $ _____ |
| SP6.4.10.A | 12ft Ht. x 8ft Wide Single Swing Chain-link Gate | EA | 1 | $ _____ | $ _____ |
| SP26.4.1.A | Electrical Utility Relocation, Conduits, Trenching, & Fees | LS | 1 | **LUMP SUM** | $ _____ |
| SP20.4.1.A | Relocate and Install Existing Field Light Poles to New Locations | EA | 2 | $ _____ | $ _____ |
| SP20.4.1.B | Upgrade Existing Field Lights to L.E.D. Fixtures | EA | 6 | $ _____ | $ _____ |
| SP20.4.1.C | New Field Light Pole w/ L.E.D. Fixtures | EA | 1 | $ _____ | $ _____ |
| SP22.4.1.A | Field Lighting Ground Installation | LS | 1 | **LUMP SUM** | $ _____ |
| SP23.4.1.A | Baseball Field Improvements | LS | 1 | **LUMP SUM** | $ _____ |
| SP24.4.1.A | Phase II Electrical Preparation | LS | 1 | **LUMP SUM** | $ _____ |

| | | | | | |
|---|---|---|---|---|---|
| SP25.4.1.A | Cable for Osprey Camera (Cat6 Cable, Trenching, Conduit, Data Rack) | LS | 1 | **LUMP SUM** | $ _____ |
| SP27.4.1.A | Football Field Goals (C.F.C.I.) | EA | 2 | $ _____ | $ _____ |
| SP6.4.11.A | Football Security Netting Posts (30ft. Above Grade) | EA | 2 | $ _____ | $ _____ |
| SP27.4.2.A | Football Security Netting (O.F.C.I.) | LS | 1 | $ _____ | $ _____ |
| 703.4.1.B | Baseball Backstop Concrete Wall | LF | 128 | $ _____ | $ _____ |
| 703.4.1.C | Softball Backstop Concrete Wall | LF | 118 | $ _____ | $ _____ |
| SP6.4.12.A | Baseball Backstop Netting Posts (40ft. Above Grade) | EA | 4 | $ _____ | $ _____ |
| SP6.4.13.A | Softball Backstop Netting Posts (30ft. Above Grade) | EA | 4 | $ _____ | $ _____ |
| SP27.4.8.A | Baseball Foul Pole w/ Turf Access Box | EA | 1 | $ _____ | $ _____ |
| SP27.4.9.A | Baseball Foul Pole w/ Concrete Access Box | EA | 1 | $ _____ | $ _____ |
| SP27.4.3.A | Baseball Base Set | EA | 1 | $ _____ | $ _____ |
| SP27.4.4.A | Baseball Home Plate | EA | 1 | $ _____ | $ _____ |
| SP27.4.5.A | Softball Base Set | EA | 1 | $ _____ | $ _____ |
| SP27.4.6.A | Softball Home Plate | EA | 1 | $ _____ | $ _____ |
| SP27.4.7.A | Softball Pitching Rubber | EA | 1 | $ _____ | $ _____ |
| 2060.4.1.A.1. | Minor Changes | CS | 1 | **CONTINGENT SUM** | $ 25,000.00 |
| | | | **TOTAL OF BID SCHEDULE A** | | $_____ |

| Item No. | Description | Unit | Estimated Quantity | Bid Unit Price | Bid Price |
|---|---|---|---|---|---|
| SP5 | Schedule B - Alternate #1<br>Synthetic Turf System | SF | 144,200 | $ _____ | $ _____ |
| | **TOTAL OF BID SCHEDULE B** | | | | |

5.01 Bid prices listed shall include all applicable taxes and fees.

5.02 Unit Prices have been computed in accordance with the Contract Documents.

5.03 Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

**ARTICLE 6 – TIME OF COMPLETION & EMPLOYMENT**

6.01 Bidder agrees that all items included in the Base Bid and Alternate, if awarded, will be substantially complete by July 21, 2020 and will be completed and ready for final payment in accordance with the General Conditions by July 30, 2020.

6.02 Bidder accepts the provisions of the Contract Documents as to liquidated damages.

6.03 Bidder agrees to comply with Idaho Code 44-1001 through 44-1005, regarding employment of Idaho residents.

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

7.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security in the form of: cash, a certified check, cashier's check, or a Bid bond (on the form attached) issued by a surety meeting the requirements of the General Conditions.;

B. Bidder shall include in his Bid the name, or names and address, or addresses, and Idaho Public Works Contractor License Numbers of the Subcontractors who shall, in the event the Bidder secures the Contract, subcontract the plumbing, heating and air-conditioning work, and electrical work under the general Contract;

C. State of Idaho Public Works Contractor's License No.: _____ ;

D. *Not Used*

**ARTICLE 8 – DEFINED TERMS**

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Bidding Documents.

## ARTICLE 9 – BID SUBMITTAL

9.01 This Bid is submitted by:

If Bidder is:

**An Individual**

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

**A Partnership**

Partnership Name: _____

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

**A Corporation**

Corporation Name: _____ (SEAL)

State of Incorporation: _____
Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest _____

Date of Qualification to do business in Idaho is ____/____/____.

**A Joint Venture**

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____(SEAL)

By: _____
(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address _____

_____

Phone No. _____ Fax No. _____

E-mail _____ _____

SUBMITTED on _____, 20____.

Idaho Public Works Contractor License No. _____.

# BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:
City of Sandpoint
1123 Lake St.
Sandpoint, ID 83864

BID
Bid Due Date: March 10, 2020
Description *(Project Name and Include Location)*:
War Memorial Field Improvements Phase I, Sandpoint, Idaho

BOND
Bond Number: _____
Date *(Not earlier than Bid due date)*: _____
Penal sum _____ $ _____
(Written in Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

| **BIDDER** | **SURETY** |
|---|---|
| _____ (Seal) | _____ (Seal) |
| Bidder's Name and Corporate Seal | Surety's Name and Corporate Seal |
| By: _____ | By: _____ |
| Signature | Signature (Attach Power of Attorney) |
| _____ | _____ |
| Print Name | Print Name |
| _____ | _____ |
| Title | Title |
| Attest: _____ | Attest: _____ |
| Signature | Signature |
| _____ | _____ |
| Title | Title |

*Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint ventures, if necessary.*

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

   3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

   3.2 All Bids are rejected by Owner, or

   3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

# Naming of Subcontractors Form

Per Idaho Code, 67-2310, Bidder shall include in his or her Bid the names and address, and Idaho Public Works Contractor License Number of the Subcontractors who shall, in the event the Bidder secures the Contract, subcontract the plumbing, heating and air-conditioning work, and electrical work under the general Contract. Failure to name Subcontractors as required shall render any Bid submitted by the Bidder unresponsive and void.

| Subcontractor Name and Address | Classification | License Number |
|---|---|---|
| | Plumbing Contractor | |
| | Heating and Air-Conditioning Contractor | |
| | Electrical Contractor | |
| | | |
| | | |
| | | |

# PART 4

# SAMPLE CONTRACT FORMS

# AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT

This Agreement is by and between **CITY OF SANDPOINT** ("Owner") and **_____**("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

## ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: demolition, clearing and grubbing, excavation, cement treated base application, trenching and piping, backfill, grading, cast-in-place concrete, fencing, field lighting and associated electrical, artificial turf/drainage system and other features.

## ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: War Memorial Field Improvements - Phase I, including new field configuration with artificial turf surfacing and other related civil and electrical improvements at War Memorial Field, in Sandpoint, Idaho.

## ARTICLE 3—ENGINEER

3.01 The Owner will assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The Project has been designed by the Owner's consultant Bernardo Wills Architects.

## ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Dates*

A. The Work will be substantially complete on or before July 21, 2020, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before July 30, 2020.

4.03 *Milestones*

A. Not Used

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4.04 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. *Substantial Completion:* Contractor shall pay Owner $4,000.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.

2. *Completion of Remaining Work:* After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $1,000.00 for each day that expires after such time until the Work is completed and ready for final payment.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

**ARTICLE 5—CONTRACT PRICE**

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

**ARTICLE 6—PAYMENT PROCEDURES**

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the **25th** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

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1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
    a. **95** percent of the value of the Work completed (with the balance being retainage).
    b. **95** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **95** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05 *Interest*

A. All amounts not paid when due will bear interest at the rate of **six** percent per annum.

**ARTICLE 7—CONTRACT DOCUMENTS**

7.01 *Contents*

A. The Contract Documents consist of all of the following:
    1. This Agreement.
    2. Bonds:
        a. Performance bond (together with power of attorney).
        b. Payment bond (together with power of attorney).
    3. Standard General Conditions, EJCDC C-700 (2018 Edition).
    4. Supplementary Conditions.
    5. Specifications (not attached but incorporated by reference) consisting of the Idaho Standards for Public Works Construction (ISPWC – 2017 Edition), excluding Division 100.
    6. Special Provisions.
    7. Drawings (not attached but incorporated by reference) consisting of **[37]** sheets with each sheet bearing the following general title: **City of Sandpoint, War Memorial Field Improvements, Phase I**.
    8. Addenda (numbers **[number]** to **[number]**, inclusive).

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9. Contractor's Bid
10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.
    e. Warranty Bond, if any.
11. In the event of inconsistency between the Contract Documents, the Contract Documents shall be interpreted in accordance with the listed priorities set forth in this provision, i.e, requirements of item 1 shall supersede all lower ranked items.

B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

## ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 *Contractor's Representations*

A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:

1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.

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6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____(which is the Effective Date of the Contract).

Owner:

_____
*(typed or printed name of organization)*

By: _____
*(individual's signature)*

Date: _____
*(date signed)*

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Attest: _____
*(individual's signature)*

Title: _____
*(typed or printed)*

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Address:

_____

_____

_____

Phone: _____

Email: _____

*(If **[Type of Entity]** is a corporation, attach evidence of authority to sign. If **[Type of Entity]** is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)*

Contractor:

_____
*(typed or printed name of organization)*

By: _____
*(individual's signature)*

Date: _____
*(date signed)*

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

*(If **[Type of Entity]** is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest: _____
*(individual's signature)*

Title: _____
*(typed or printed)*

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Address:

_____

_____

_____

Phone: _____

Email: _____

License No.: _____
*(where applicable)*

State: _____

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# PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):
City of Sandpoint
1123 Lake St.
Sandpoint, ID 83864

CONTRACT
Effective Date of Agreement:
Amount (Figures):
Description (*Name and Location*): City of Sandpoint, War Memorial Field Improvements, Phase I

BOND
Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

**CONTRACTOR AS PRINCIPAL**

_____ (Seal)
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

**SURETY**

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature (Attach Power of Attorney)

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

*Note: Provide execution by additional parties, such as joint venturers, if necessary.*

Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.

2. If there is no Owner Default, Surety's obligation under this Bond shall arise after:

   2.1 Owner has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and

   2.2 Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and

   2.3 Owner has agreed to pay the Balance of the Contract Price to:

      1. Surety in accordance with the terms of the Contract; or

      2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.

3. When Owner has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:

   3.1 Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or

   3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

   3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or

   3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

      1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or

      2. Deny liability in whole or in part and notify Owner citing reasons therefor.

4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 3.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

5. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to Owner shall not be

greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To the limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;

5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and

5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

6. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

7. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

8. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located, and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

9. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

10. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

11. Definitions.

11.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.

11.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

11.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – *(Name, Address and Telephone)*
Surety Agency or Broker:

# PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):
City of Sandpoint
1123 Lake St.
Sandpoint, ID 83864

CONTRACT
Effective Date of Agreement:
Amount (Figures):
Description *(Name and Location)*: City of Sandpoint, War Memorial Field Improvements, Phase I

BOND
Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

**CONTRACTOR AS PRINCIPAL**

_____ (Seal)
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

**SURETY**

_____(Seal)
Surety's Name and Corporate Seal

By: _____
Signature (Attach Power of Attorney)

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

*Note: Provide execution by additional parties, such as joint venturers, if necessary.*

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to Owner, this obligation shall be null and void if Contractor:

   Promptly makes payment, directly or indirectly, for all sums due Claimants, and

   Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.

4. Surety shall have no obligation to Claimants under this Bond until:

   Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

   Claimants who do not have a direct contract with Contractor:

   1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and

   2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and

   3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.

5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.

6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:

   Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

   Pay or arrange for payment of any undisputed amounts.

7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.

8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of

the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.

9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders, and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
15. Definitions

    Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

    Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

    Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract, or to perform and complete or otherwise comply with the other terms thereof.

| FOR INFORMATION ONLY – *(Name, Address and Telephone)*<br>Surety Agency or Broker: |
|---|

# PART 5

# ISPWC DIVISION 100 – STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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EJCDC® C-700, Standard General Conditions of the Construction Contract.
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EJCDC® C-700, Standard General Conditions of the Construction Contract.
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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*

*a.* A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

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requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

*d.* A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the


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recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.

23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.

    a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.

    b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

    c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.

32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.


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33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.

36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.


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43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.

44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

46. *Technical Data*

    a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

    b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

    c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. *Unit Price Work*—Work to be paid for on the basis of unit prices.

49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.


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1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*: The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*: The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;

2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.


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F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work


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into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.


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## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

A. *Standards Specifications, Codes, Laws and Regulations*

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility


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inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.


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B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

## ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the


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established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. Abnormal weather conditions;

3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and

4. Acts of war or terrorism.


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D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.

2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.

3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;

2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;

3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;

4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and

5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

## ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.


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B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment


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and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or

4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.


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5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;

2. is of such a nature as to require a change in the Drawings or Specifications;

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in


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Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;


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3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;

4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;

3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown


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or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and

c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;

2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures


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of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special


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conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or


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Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by


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Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and

2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.


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L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);


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4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against


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Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.


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6.06 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.01 *Contractor's Means and Methods of Construction*

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

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B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

A. *Contractor's Request; Governing Criteria*: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that the proposed item:

1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;


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2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) has a proven record of performance and availability of responsive service; and

4) is not objectionable to Owner.

b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.


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3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

    a. will certify that the proposed substitute item will:

        1) perform adequately the functions and achieve the results called for by the general design;

        2) be similar in substance to the item specified; and

        3) be suited to the same use as the item specified.

    b. will state:

        1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

        2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

        3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

    c. will identify:

        1) all variations of the proposed substitute item from the item specified; and

        2) available engineering, sales, maintenance, repair, and replacement services.

    d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.


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E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.


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H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.


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7.09 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.


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7.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

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I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.


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3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. *Shop Drawings*

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. *Samples*

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will


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document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.


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d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03. 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.

B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

8. Any inspection, test, or approval by others; or


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9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.


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D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and

3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

## ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.


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E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.


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B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.


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9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.


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## ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

A. Engineer has the authority to reject Work in accordance with Article 14.

B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer's authority as to changes in the Work is set forth in Article 11.

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E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.


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## ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

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B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

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1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or
2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
    b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
    c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
    d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
    f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.


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11.08 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content*: Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

1. *Submittal*: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. *Supporting Data*: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.

    a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.

    b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

    The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review*: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. *Engineer's Full Review and Action on the Change Proposal*: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change


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Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

## ARTICLE 12—CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge


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and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or


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2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.

5. Other costs consisting of the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are


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consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.


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g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:

1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change


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Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision


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thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

## ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.


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D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

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losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,


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or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

## ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation


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establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.


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4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
    a. to supervise, direct, or control the Work;
    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
    d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
    e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
    a. the Work is defective, requiring correction or replacement;
    b. the Contract Price has been reduced by Change Orders;
    c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
    d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
    e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
    a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;


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b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time


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submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without


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significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
    a. all documentation called for in the Contract Documents;
    b. consent of the surety, if any, to final payment;
    c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.


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d. a list of all duly pending Change Proposals and Claims; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,


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appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;

2. correct such defective Work;

3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.


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F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,


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attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The


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provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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# PART 6

# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

SC-1.01 Add the following paragraph immediately after Paragraph 1.01.A.50:

51. *Special Provisions* - The part of the Contract that amends or supplements the Specifications.

## ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

A. Owner shall furnish to Contractor **[1]** printed copy of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully signed counterpart of the Agreement). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

SC-3.01 Delete Paragraph 3.01.C in its entirety.

## ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.05 *Delays in Contractor’s Progress*

SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs:

5. *Weather-Related Delays*

a. If “abnormal weather conditions” as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the


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following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.

b. The existence of abnormal weather conditions will not relieve Contractor of the obligation to demonstrate and document that delays caused by abnormal weather are specific to the planned work activities or that such activities thus delayed were on Contractor's then-current Progress Schedule's critical path for the Project.

## ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.02 *Use of Site and Other Areas*

SC-5.02 Delete Paragraph 5.02.A.2 and insert the following paragraph in its place:

A. 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, defend, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

5.03 *Subsurface and Physical Conditions*

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

| Report Title | Date of Report | Technical Data |
|---|---|---|
| Geotechnical Evaluation, Memorial Field Turf Conversion | February 18, 2020 | Test boring logs; laboratory test results; geotechnical recommendations |
| Limited Geotechnical Evaluation, Memorial Field | March 26, 2015 | Test boring logs; laboratory test results |
| Geotechnical Evaluation, Memorial Field Grandstands | June 5, 2014 | Test pits logs; laboratory test results; geotechnical recommendations |


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F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

| Drawings Title | Date of Drawings | Technical Data |
|---|---|---|
| Memorial Field Grandstands and Gateway | May 10, 2016 | Architectural, Civil, Electrical, Landscape, Mechanical, Structural plans |
| War Memorial Field Lighting Replacement | April 1, 2011 | Electrical plans |
| Memorial Field Baseball Concession/Restroom | February 20, 1998 | Architectural, Electrical, Structural plans |
| Memorial Field Concession | April 20, 1994 | Electrical, Plumbing plans |
| Concession Stand – Memorial Park | July 7, 1993 | Architectural, Electrical, Plumbing, Structural plans |

G. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at **City Hall, 1123 Lake Street, Sandpoint, Idaho,** during regular business hours, or may request copies from Engineer.

5.06 *Hazardous Environmental Conditions*

SC-5.06 Supplement Paragraph 5.06.C with the following new paragraphs immediately after Paragraph 5.06.C:

1. The Contractor's scope of work shall include implementation of necessary safety, public health and environmental procedures and requirements relating to sanitary sewage encountered during the work.

SC-5.06 Delete Paragraph 5.06.J and insert the following paragraph in its place:

To the fullest extent permitted by Laws and Regulations, Contractor shall defend, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for Whom Contractor is responsible. Nothing in Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

## ARTICLE 6—BONDS AND INSURANCE

6.02 *Insurance—General Provisions*


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SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor's Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

D. *Workers' Compensation and Employer's Liability:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions). All insurance policies shall contain a Waiver of Subrogation coverage or endorsements.

| **Workers' Compensation and Related Policies** | **Policy limits of not less than:** |
|---|---|
| **Workers' Compensation** | |
| State | Statutory |
| Applicable Federal (e.g., Longshoreman's) | Statutory |
| Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable | Statutory |

F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:

1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
2. damages insured by reasonably available personal injury liability coverage, and
3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.
    a. Such insurance must be maintained for three years after final payment.
    b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.


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2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
4. Underground, explosion, and collapse coverage.
5. Personal injury coverage.
6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
8. All policies shall contain waiver of subrogation coverage or endorsements.

H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
2. Any exclusion for water intrusion or water damage.
3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
4. Any exclusion of coverage relating to earth subsidence or movement.
5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
6. Any limitation or exclusion based on the nature of Contractor's work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

| **Commercial General Liability** | **Policy limits of not less than:** |
|---|---|
| General Aggregate | $2,000,000.00 |
| Products—Completed Operations Aggregate | $2,000,000.00 |
| Personal and Advertising Injury | $1,000,000.00 |
| Bodily Injury and Property Damage—Each Occurrence | $1,000,000.00 |


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J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

| Automobile Liability | Policy limits of not less than: |
|---|---|
| **Combined Single Limit** | |
| Combined Single Limit (Bodily Injury and Property Damage) | $1,000,000.00 |

K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

| Excess or Umbrella Liability | Policy limits of not less than: |
|---|---|
| Each Occurrence | $2,000,000.00 |
| General Aggregate | $2,000,000.00 |

L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein.

M. *Contractor's Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

| Contractor's Pollution Liability | Policy limits of not less than: |
|---|---|
| General Aggregate | $1,000,000.00 |

N. *Contractor's Professional Liability Insurance:* If Contractor will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.


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| Contractor's Professional Liability | Policy limits of not less than: |
|---|---|
| Each Claim | $500,000.00 |
| Annual Aggregate | $1,000,000.00 |

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

F. *Builder's Risk Requirements:* The builder's risk insurance must:

1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

    a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.

    b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.

2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).

4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).

5. extend to cover damage or loss to insured property while in transit.

6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.


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7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.

8. include performance/hot testing and start-up, if applicable.

9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.

10 include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds."

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.03 *Labor; Working Hours*

SC-7.03 Delete Paragraph 7.03.C in its entirety, and insert the following:

C. Contractor may perform the Work at the Site only between the hours of 8AM and 8PM all days of the week unless otherwise authorized by the Owner in writing. No work may be performed at the Site on the following dates: April 12, 2020 (Easter); July 3-5, 2020 (Independence Day Weekend).

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

D. Contractor may not perform Work on the Site as follows:

1. Before April 1, 2020.

7.04 *Services, Materials, and Equipment*

SC-7.04 Add the following new paragraph immediately after Paragraph 7.04C:

D. All project related deliveries and hauling are restricted to Division Avenue and Ontario Street unless otherwise authorized by the Owner in writing. No load restrictions will be imposed on these City streets.

7.10 *Taxes*

SC-7.10 Add the following paragraph immediately after Paragraph 7.10.A:

B. In the event of the Contractor's default on the payment of taxes, excises, and license fees as set forth in Idaho Code 63-1503, the Owner shall have the authority to withhold from any payment due the Contractor under this contract, the estimated amount of such accrued and accruing taxes, excises, and license fees for the benefit of all taxing authorities to which said Contractor is liable.


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7.11 *Laws and Regulations*

SC-7.11 Add the following paragraph immediately after Paragraph 7.11.C:

D. While not intended to be inclusive of all Laws or Regulations for which Contractor may be responsible under paragraph 6.09, the following Laws or Regulations are included as mandated by statute or for the convenience of the Contractor;

1. **Idaho Code Section 63-1501. Definitions.** As used in this act, the following terms shall have the following meanings:

   "Contracting units" shall include the state or any officer or department thereof, the counties or other subdivisions of the state, and all municipal and quasi-municipal corporations therein.

   "Contractor" shall mean any person, firm, co-partnership, association, or corporation, foreign or domestic, entering into a contract for the construction, erection, repair, or improvement of any kind or character of public works in this state.

   "Taxes" shall mean all taxes, assessments, excises, and license fees authorized to be levied, assessed, and collected under the laws of this state, other than taxes on real property.

   "Taxing unit" shall mean the state or any officer or department thereof, the counties or other subdivisions of the state, and all municipal and quasi-municipal corporations therein authorized by law to assess, levy and collect taxes.

2. **Idaho Code Section 63-1502. Conditions precedent to contract for public works.** Before entering into a contract for the construction of any public works in this state, the contracting unit shall require as conditions precedent that the contractor be authorized to do business in this state and that he furnish satisfactory evidence that he has paid or secured to the satisfaction of the respective taxing units all taxes for which he or his property is liable then due or delinquent.

3. **Idaho Code Section 63-1503. Contractor for public works to pay or secure taxes—Agreement.** Every contract for the construction of public works by a contracting unit of this state shall contain substantially the following provisions:

   The Contractor, in consideration of securing the business of erecting or constructing public works in this state, recognizing that the business in which he is engaged is of a transitory character, and that in the pursuit thereof, his property used therein may be without the state when taxes, excises, or license fees to which he is liable become payable, agrees:

   a. To pay promptly when due all taxes (other than on real property), excises and license fees due to the state, its subdivisions, and municipal and quasi-municipal corporations therein accrued or accruing during the term of this contract, whether or not the same shall be payable at the end of such term;

   b. That if the said taxes, excises, and license fees are not payable at the end of said term, but liability for the payment thereof exists, even though the same constitute liens upon his property, to secure the same to the satisfaction of the respective officers charged with the collection thereof; and


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c. That in the event of his default in the payment or securing of such taxes, excises, and license fees, to consent that the department, officer, board, or taxing unit entering into this contract may withhold from any payment due him hereunder the estimated amount of such accrued and accruing taxes, excises, and license fees for the benefit of all taxing units to which said contractor is liable.

4. **Idaho Code Section 44-1002** requires the following: The Contractor must employ ninety-five percent (95%) bona fide Idaho residents as employees on any job under any such contract except where under such contracts fifty (50) or less persons are employed, the Contractor may employ ten percent (10%) nonresidents, provided, however, in all cases employers must give preference to the employment of bona fide residents in the performance of said work, and no contract shall be let to any person, firm, association, or corporation refusing to execute an agreement with the above mentioned provisions in it; provided, that, in contracts involving the expenditure of federal aid funds this act shall not be enforced in such a manner as to conflict with or be contrary to the federal statutes prescribing a labor preference to honorably discharged soldiers, sailors, and marines, prohibiting as unlawful any other preference or discrimination among citizens of the United States.

5. **Idaho Code Chapter 19 of Title 54** requires proper licensing of Public Works Contractors.

7.18 *Indemnification*

SC-7.18 Delete Paragraph 7.18.A in its entirety and insert the following paragraph in its place:

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall defend, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property )other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

**ARTICLE 8—OTHER WORK AT THE SITE**

8.02 *Coordination*

SC-8.02 Add the following immediately after Paragraph 8.02.B:

C. Owner intends to contract and/or coordinate with others for the performance of other work at or adjacent to the Site.

1. Avista shall have authority and responsibility for coordination of the various contractors and work forces at the Site;


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2. The following specific matters are to be covered by such authority and responsibility: furnishing and installing materials, equipment, and services owned by Avista.

SC-8.01 Add the following immediately after Paragraph 8.01.F:

G. Durfee Construction (Brody Durfee, 208-920-0925) is leading a volunteer effort to fabricate and install a replacement Victory Bell tower beyond the southern boundary of the Site as indicated on the Plans. Contractor shall provide reasonable access to Durfee Construction and their subcontractors to complete their work as may be practical.

**ARTICLE 9—OWNER'S RESPONSIBILITIES**

A. No Supplementary Conditions in this Article.

**ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

SC-10.01 Delete Paragraph 10.01.A in its entirety, and insert the following paragraphs in its place:

A. Engineer intends to contract with Bernardo Wills Architects (BWA) to make visits to the Site at intervals appropriate to the various stages of construction as it deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, BWA, for the benefit of Engineer, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. BWA will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. BWA's efforts will be directed toward providing for Engineer a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, BWA will keep Engineer informed of the progress of the Work and will endeavor to guard Engineer against defective Work.

B. BWA will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.02 *Visits to Site.*

SC-10.02 Delete Paragraphs 10.02 in its entirety.

10.03 *Resident Project Representative.*

SC-10.03 Delete Paragraphs 10.03 in its entirety.

**ARTICLE 11—CHANGES TO THE CONTRACT**

11.01 *Amending and Supplementing the Contract*


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SC-11.01 Delete Paragraph 11.01.C in its entirety and insert the following in its place:

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by BWA's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of BWA.

**ARTICLE 12—CLAIMS**

No suggested Supplementary Conditions in this Article.

**ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK**

13.03 *Unit Price Work*

SC-13.03 Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

   a. the extended price of a particular item of Unit Price Work amounts to 10 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement; and

   b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

**ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCCEPTANCE OF DEFECTIVE WORK**

No suggested Supplementary Conditions in this Article.

**ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD**

No suggested Supplementary Conditions in this Article.

**ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

No suggested Supplementary Conditions in this Article.


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**ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES**

No suggested Supplementary Conditions in this Article.

**ARTICLE 18—MISCELLANEOUS**

SC-18.07 Delete Paragraph 18.07 in its entirety and insert the following paragraph in its place:

18.07 Controlling Law

This Contract is to be governed by the law of the State of Idaho. The jurisdiction/venue for any action arising out of performance of this Contract, or interpretation of its terms and conditions, shall be in the District Court in the First Judicial District of the State of Idaho, Bonner County. In any action to enforce the terms and conditions of this Contract, the prevailing party may recover its reasonable attorney fees.

Add the following Article 19 – Prosecution of the Work, immediately following Article 18 - Miscellaneous.

**ARTICLE 19—PROSECUTION OF THE WORK**

SC-19.01 *General*

A. From the time of commencement of the Work to the time of Final Acceptance the Contractor shall: provide adequate Materials, Equipment, labor, and supervision to perform and complete the Work; perform the Work as vigorously and as continuously as conditions permit, and according to a Project Work schedule that ensures completion within the Contract Time or the adjusted Contract Time; not voluntarily suspend or slow down operations without prior written approval from the Engineer; and not resume suspended Work without the Engineer's written authorization.

SC-19.02 *Cost Reduction Proposals*

A. The Contractor may submit written proposals to the Engineer that modify Plans, Specifications, or other Contract Documents for the sole purpose of reducing the total cost of construction. Unless otherwise agreed to in writing, a proposal that is solely or primarily a proposal to reduce estimated quantities or delete Work, is not eligible for consideration as a cost reduction proposal.

B. Proposal Requirements - The Engineer will not adopt a cost reduction proposal that impairs essential functions or characteristics of the Project, including, but not limited to, service life, economy of operation, ease of maintenance, designed appearance, or design and safety standards.

To conserve time and funds, the Contractor may first submit a written request for a feasibility review by the Engineer. The request should contain a description of the proposal together with a rough estimate of anticipated dollar and time savings. The Engineer will, within a reasonable time, advise the Contractor in writing whether or not the proposal would be considered by the Engineer, should the Contractor elect to submit a detailed cost reduction proposal.

C. A detailed cost reduction proposal shall include without limitation the following information:


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1. A description of existing Contract requirements for performing the Work and the proposed change;
2. The Contract items of Work affected by the proposed change, including any quantity variation caused by the proposed change;
3. Pay Items affected by the proposed change including any quantity variations;
4. A detailed cost estimate for performing the Work under the existing Contract and under the proposed change.

Costs of re-design, which are incurred after the Engineer has accepted the proposal, shall be included in the cost of proposed work; and a date by which the Engineer must accept the proposal in order to accept the proposed change without impacting the Contract Time or cost reduction amount.

D. Continuing to Perform Work - The Contractor shall continue to perform the Work according to Contract requirements until the Engineer issues a Change Order incorporating the cost reduction proposal. If the Engineer fails to issue a Change Order by the date specified in the proposal, the proposal shall be deemed rejected.

E. Consideration of Proposal - The Engineer is not obligated to consider any cost reduction proposal. The Engineer will not be liable to the Contractor for failure to accept or act upon any cost reduction proposal submitted. The Engineer will determine in its sole discretion whether to accept a cost reduction proposal as well as the estimated net savings in construction costs from the adoption of all or any part of the proposal. In determining the estimated net savings, the Engineer may disregard the Schedule of Items. The Engineer will establish prices that represent a fair measure of the value of Work to be performed or to be deleted as a result of the cost reduction proposal.

F. Sharing Investigation Costs - As a condition for considering a Contractor's cost reduction proposal, the Engineer reserves the right to require the Contractor to share in the Engineer's costs of investigating the proposal. If the Engineer exercises this right, the Contractor shall provide written acceptance of the condition to the Engineer. Such acceptance will authorize the Engineer to deduct its share of investigation costs from payments due or that may become due to the Contractor under the Contract.

G. Acceptance of Proposal Requirements - If the Contractor's cost reduction proposal is accepted in whole or in part, acceptance will be made by a Change Order. The Contractor's cost of preparing the cost reduction proposal and the Engineer's costs of investigating the proposal, including any portion paid by the Contractor, will be excluded from determination of the estimated net savings in construction costs. Costs of re-design, which are incurred after the Engineer has accepted the proposal, will be included in the cost of the Work attributable to cost reduction measures. If the Engineer accepts the cost reduction proposal, the Change Order that authorizes the cost reduction measures will also address any Contract Time adjustment.

SC-19.03 *Force Account Work*

The Materials, Equipment and labor rates and procedures established in this Section apply to Extra Work ordered by the Engineer to be performed as Force Account Work.


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A. Extra Work on a Force Account Basis - Before ordering Force Account Work, the Engineer will discuss the proposed work with the Contractor, and will seek the Contractor's comments and advice concerning the formulation of Force Account Work specifications. The Engineer is not bound by the Contractor's comments and advice, and has final authority to: determine and direct the Materials, Equipment and labor to be used on the approved Force Account Work and to determine the time of the Contractor's performance of the ordered Force Account Work.

B. If the Engineer orders the performance of Extra Work as Force Account Work, the Engineer will record, on a daily basis, the Materials, Equipment, labor, and Special Services used for the Force Account Work during that day. The Engineer and the Contractor shall sign the record daily to indicate agreement on the Materials, Equipment, labor, and Special Services used for the Force Account Work performed on that day.

C. The Owner will not be responsible for additional costs that are a direct or indirect result of the Contractor's inefficient means and methods or that reasonably could have been avoided if the Materials, Equipment, labor or services had been obtained at a more commercially reasonable cost.

D. Payment for Force Account Work shall be negotiated and agreed upon by Change Order or Minor Change Order.


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# PART 7

# SPECIAL PROVISIONS

# SPECIAL PROVISIONS

These Special Provisions amend or supplement the Idaho Standards for Public Works Construction, 2017 Edition (ISPWC). The Work on this project shall be accomplished in accordance with the ISPWC, as modified or supplemented by the Supplementary Conditions and these Special Provisions. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Special Provisions have the meanings stated in the General Conditions. Additional terms used in these Special Provisions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Special Provisions is the same as the address system used in the ISPWC, unless otherwise modified herein.

## DIVISION 200 – EARTHWORK

### Section 201 – Clearing and Grubbing and Removal of Obstructions

**PART 1 – GENERAL**

1.1.B Delete Paragraph 1.1 B and replace with the following:

1.1 B Removal of buildings, irrigation boxes, pipes, bridges, abandoned utilities, fences, drop inlets, culverts, concrete flatwork, and any other structures designated for removal on the Plans or by the Owner.

**PART 3 - WORKMANSHIP**

**Add the following;**

3.3 REMOVAL AND DISPOSAL OF OTHER MATERIALS

A. General

1. Complete the removal to the limits shown on the Contract documents or as directed by the Engineer.

2. Dispose of unusable material outside the construction limits in an approved location in accordance with all local, state, and federal regulations.

3. Copies of the disposal agreement with property owners are to be furnished to the Owner upon request.

B. Protection

1. Locate and protect all live utilities from damage that are not planned for removal.

2. Protect benchmarks and survey monuments from damage and displacement

3. Exercise care to ensure areas outside the construction limits remain undisturbed.

4. Satisfactorily restore any damage to existing facilities or structures resulting from carelessness or negligence by the Contractor to their original condition at the Contractor's expense.

C. Removal and Disposal

1. Bituminous Pavement shall be removed to clean, straight lines. Edges to be joined shall be saw cut. Where only the surface of existing bituminous pavement is to be removed, the method of removal shall be approved by the Engineer, and a minimum laying depth of 1 inch of new pavement material shall be provided at the join line. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be trimmed to neat straight lines before resurfacing to ensure that all areas to be resurfaced are accessible to the rollers used to compact the subgrade of paving materials.

2. Concrete Pavement shall be removed to neatly sawed edges. Saw cuts shall be made to a minimum depth of 1½ inches. If a saw cut in concrete pavement falls within 3 feet of a construction joint, cold joint, expansion joint, or edge, the concrete shall be removed to the joint or edge. The edges of existing concrete pavement adjacent to trenches, where damaged subsequent to saw cutting of the pavement, shall again be saw cut to neat, straight lines for the purpose of removing the damaged pavement areas. Such saw cuts shall be either parallel to the original saw cuts or shall be cut on an angle which departs from the original saw cut not more than 1 inch in each 6 inches.

3. Concrete curb, sidewalk, gutters, driveways, approaches, and other miscellaneous concrete shall be removed to neatly sawed edges with saw cuts made to a minimum depth of 1½ inches. Concrete sidewalk, approaches, and driveways to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than 30 inches in either length or width. If the saw cut in sidewalk, approaches, or driveways would fall within 30 inches of a construction joint or edge, the concrete shall be removed to the joint or edge, except that where the saw cut would fall within 12 inches of a score mark, the saw cut shall be made in and along the score mark. Curb

and gutter shall be saw cut to a depth of 1½ inches on a neat line at right angles to the curb face.

4. All saw cutting shall be incidental to Removal of Existing Asphalt or Removal of Existing Concrete.

**PART 4 - MEASUREMENT AND PAYMENT**

Delete Paragraph 4.1 A and replace with the following:

A. Clearing and Grubbing (8-inch Depth): By the cubic yard in accordance with the limits indicated on the Plans. Includes full compensation for all materials, labor and equipment necessary for completing the work and all appurtenances not itemized in the Bid Schedule.

1. Bid Schedule Payment Reference: 201.4.1.A.1
2. Bid Schedule Description: Clearing and Grubbing (8-inch Depth)…cubic yard (CY).

Delete Paragraph 4.1 D and replace with the following:

D. Removal of Existing Asphalt: By the horizontal square yard (SY). Includes full compensation for all materials, labor and equipment necessary for completing the work and all appurtenances not itemized in the Bid Schedule.

1. Bid Schedule Payment Reference: 201.4.1.D.1
2. Bid Schedule Description: Removal of Existing Asphalt…square yard (SY).

E. Removal of Existing Chain Link Fence: By the horizontal lineal foot (LF). Includes full compensation for all materials, labor and equipment necessary for completing the work and all appurtenances not itemized in the Bid Schedule.

3. Bid Schedule Payment Reference: 201.4.1.E.1
4. Bid Schedule Description: Removal of Existing Chain Link Fence…lineal foot (LF).

## Section 202 – Excavation and Embankment

### PART 3 - WORKMANSHIP

3.2 Add the following new paragraph immediately after Paragraph 3.2.B.12:

3.2.B.13 Work shall be limited to the grades and lines indicated on the Drawings. No payment will be made for areas over-excavated by error, or for material to correct over-excavation.

### PART 4 - MEASUREMENT AND PAYMENT

4.1 E Add the following after 4.1 D:

E. Excavation and Haul Offsite: By the cubic yard measured in its original position from field cross sections, using the average end area method with no correction for curvature. Includes full compensation for all materials, labor and equipment necessary for completing the work and all appurtenances not itemized in the bid schedule.

1. Bid Schedule Payment References: 202.4.1.E.1
2. Bid Schedule Description: Excavation and Haul Offsite…cubic yard (CY)

F. Unsuitable Material Excavation and Haul: By the cubic yard measured in its original position from field cross sections, using the average end area method with no correction for curvature. Includes full compensation for all materials, labor and equipment necessary for completing the work and all appurtenances not itemized in the bid schedule.

1. Bid Schedule Payment Reference: 202.4.1.F.1
2. Bid Schedule Description: Unsuitable Material Excavation and Haul Offsite…cubic yard (CY)

G. Field Rough Grading / CTB Prep: By the square yard. Includes excavation and embankment of onsite material to the parking lot subgrade elevations staked in the field. Includes full compensation for all materials, labor and equipment necessary for completing the work and all appurtenances not itemized in the bid schedule. Also includes Elections lot grading of the excess suitable material from the Admin Parking Lot.

1. Bid Schedule Payment Reference: 202.4.1.G.1
2. Bid Schedule Description: Field Rough Grading / CTB Prep…square yard (SY)

## DIVISION 300 – TRENCHING

Section 306 – Trench Backfill

### Part 3 - WORKMANSHIP

3.4 TYPE A TRENCH BACKFILL (A-1, A-2, A-3)

**Delete sections B-E and replace with the following;**

B. Compaction Requirements.
   1. 90% Compaction: From the top of the pipe bedding to a point 1 foot below subgrade (lower zone)
   2. 95% Compaction: From a point 1 foot below the subgrade to the subgrade level (upper zone).
   3. Density Requirements: Relative compaction as measured by the modified proctor (ASTM D-1557 / AASHTO T150)
   4. Effort: If densities fail to meet minimum requirements, provide necessary additional compactive effort until backfill densities meet specified requirements, at no additional cost to Owner.
   5. Method: Use A-1 compaction technique

C. Type A-1 Compaction.
   1. Deposition: In layers suitable to the equipment used for compaction. Maximum lift depth of 12 inches.
   2. Wetting: Wet to optimum moisture content ± 3%
   3. Compaction Technique: Mechanical.
   4. Testing and Recompaction:
      a. Provide one compaction test for every 50 cy of back fill material.
      b. Tests shall be located at representative locations in the upper and lower zones, or as directed by the Engineer.
      c. Areas with failing compaction test results shall be recompacted until satisfactory compaction is achieved.
      d. Compaction tests shall be taken after completion of the respective lift. Test pits shall not be used unless approved by the Engineer. Contractor shall bear all cost for excavation of test pits, standby time during testing, any re-testing, backfilling and compaction of test pits.

## DIVISION 400 – WATER

Section 401 – Water Pipe and Fittings

### Part 4 - MEASUREMENT AND PAYMENT

**Add the following to 4.1:**

C. Water Service Line (2-inch) HDPE: By the linear foot for the type and size of pipe measured along the horizontal centerline of the pipe through all fittings and valves. Includes pipe, fittings, connections / tie-ins, cleaning, disinfection and testing, excavation, bedding, backfill and all appurtenances not itemized in the Bid Schedule.

1. Bid Schedule Payment Reference: 401.4.1.C.1
2. Bid Schedule Description: Water Service Line (2-inch) HDPE… Lineal Foot (LF).

**DIVISION 700 – CONCRETE**

Section 703 – Cast-In-Place Concrete

**Part 1 - GENERAL**

1.3 REFERENCES

**Add the following:** J. Please reference Structural General Notes for further information.

**Part 2 - MATERIALS**

2.4 CONCRETE MIX – Table 1

**Delete** the 4000A psi row all together.
**Change** "4000B" psi to "4500" psi and keep row values to left.
**Add** a row below "3000" psi for "2500" psi and maintain row values to left from "3000" psi row.
**Delete** "1500" psi row all together.

2.4 CONCRETE MIX – Table 1 Footnotes

**Add:** (c) Ensure all 4500 psi concrete for all structural items.
**Add:** (d) Ensure 4500 psi concrete for all light pole footings.

2.4 CONCRETE MIX - `TABLE 2

**Delete** Table 2 and corresponding Table 2 Footnotes.

**Part 4 - MEASUREMENT AND PAYMENT**

**Add the following to 4.1:**

B. Baseball Backstop Concrete Wall – Includes all labor, materials, and equipment to install baseball backstop concrete wall. Includes survey, layout, excavation, formwork, rebar reinforcement, ties, concrete, finishing, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.B
2. Bid Schedule Description: Baseball Backstop Concrete Wall… Lineal Foot (LF).

C. Softball Backstop Concrete Wall – Includes all labor, materials, and equipment to install baseball backstop concrete wall. Includes survey, layout, excavation, formwork, rebar reinforcement, ties, concrete, finishing, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.C

2. Bid Schedule Description: Softball Backstop Concrete Wall… Lineal Foot (LF).

D. Install Concrete Footing for Future Phase II Dugout Construction – Includes all labor, materials, and equipment to install the concrete footings. Includes layout, excavation, formwork, rebar reinforcement, ties, concrete and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.

1. Bid Schedule Payment Reference: 703.4.1.D
2. Bid Schedule Description: Install Concrete Footing for Future Phase II Dugout Construction… Each (EA).

E. Install Turf Edge – Type I – Includes all labor, materials, and equipment to install the concrete turf edging. Includes layout, excavation, formwork, rebar reinforcement, ties, concrete and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.E.1
2. Bid Schedule Description: Install Turf Edge – Type I… Lineal Foot (LF)

F. Install Turf Edge – Type II – Includes all labor, materials, and equipment to install the concrete turf edging. Includes layout, excavation, formwork, rebar reinforcement, ties, concrete and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.F.1
2. Bid Schedule Description: Install Turf Edge – Type II… Lineal Foot (LF)

G. Install Turf Edge – Type III – Includes all labor, materials, and equipment to install the concrete turf edging. Includes layout, excavation, formwork, rebar reinforcement, ties, concrete and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.G.1
2. Bid Schedule Description: Install Turf Edge – Type III… Lineal Foot (LF)

H. Install Turf Edge – Type V – Includes all labor, materials, and equipment to install the concrete turf edging. Includes layout, excavation, formwork, rebar reinforcement, ties, concrete and all other required incidentals to

install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.H.1
2. Bid Schedule Description: Install Turf Edge – Type V… Lineal Foot (LF)

I. Install Turf Edge – Type VI – Includes all labor, materials, and equipment to install the concrete turf edging. Includes layout, excavation, formwork, rebar reinforcement, ties, concrete and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.I.1
2. Bid Schedule Description: Install Turf Edge – Type VI… Lineal Foot (LF)

J. Install Turf Edge – Type VII – Includes all labor, materials, and equipment to install the concrete turf edging. Includes saw cutting and removal of (12-Inch) band of existing concrete and asphalt, removal and salvage of existing bollard stanchions for re-use, layout, excavation, formwork, rebar reinforcement, ties, concrete, galvanized tube steel sleeves, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.

1. Bid Schedule Payment Reference: 703.4.1.J.1
2. Bid Schedule Description: Install Turf Edge – Type VII… Lineal Foot (LF)

Section 702 – Concrete Reinforcement

**Part 1 - GENERAL**

1.1 REFERENCES

**Add:** P. Please reference Structural General Notes for further information.

2.1 REINFORCEMENT

**Replace Item A. with** “A. Reinforcing Steel: ASTM A 615, Grade 40ksi for #3 bars. ASTM A 615, Grade 60ksi for #4 to #7 bars.”

**Replace Item B. with** “B. Reinforcing Steel: ASTM A 706, Grade 60ksi for #8 bars and greater. Use whenever rebar requires welding.”

Section 704 – Precast Concrete

**Part 4 - MEASUREMENT AND PAYMENT**
**Add the following to 4.1:**

E. Construct precast concrete Festival Tent concrete ballast weights – includes all labor, materials, and equipment to deliver ballast weights to Owner.

1. Bid Schedule Payment Reference 704.4.1.E
2. Bid Schedule description: Construct Precast Festival Tent Concrete Ballast Weights… Each (EA).

F. Precast Concrete Stormwater Outfall – Includes all labor, materials, and equipment to install the precast structure as detailed on the plans. Includes grate at the end of the stormwater pipe. Pay item shall be per each.

1. Bid Schedule Payment Reference: 704.4.1.F.1
2. Bid Schedule Description: Precast Concrete Stormwater Outfall… Each (EA).

Section 705 – Portland Cement Concrete Pavement

**Part 4 - MEASUREMENT AND PAYMENT**

**Change Item 4.1.A.2** unit of measurement from square yard (SY) to square foot (SF).

**DIVISION 1001 – CONSTRUCTION SITE MANAGEMENT**

Delete this Section 1001 in its entirety and replace with the following:

**PART 1 - PART 1 - GENERAL**

**1.1** SECTION INCLUDES

a. Erosion, sediment, and pollution control.

b. Temporary and permanent erosion control measures to prevent sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.

c. Restoration of areas eroded due to insufficient preventive measures.

d. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

e. Contractor's compliance with the Environmental Protection Agency (EPA) Construction General Permit (CGP) most recent edition, Oil Pollution Prevention Regulation 40 CFR Part 112, and the Idaho State Water Quality Standards, including, but not limited to IDAPA 58.01.02.

1.2 RELATED SECTIONS

A. Storm Water Pollution Prevention Plan (SWPPP) prepared for this project. (By Owner and Contractor)

1.3 PAY REDUCTIONS

A. When the Owner or Engineer finds the Contractor's operations to be in non-compliance with the CGP or the SWPPP, the Owner may choose to shut down all or part of the construction activities until the deficiencies are remedied. The Contractor will not be eligible for compensation or time extension for the shutdown.

B. Failure to comply with State or EPA requirements resulting in fines or penalties leveraged against the project by the State, EPA, or other a separate agency are in addition to the pay reductions described herein and are the sole responsibility of the Contractor.

C. Outstanding items such as sediment control, signed inspection reports, or outstanding corrective action items at the time of a payment request may cause the payment request to be withheld until the items are addressed, at the option of the Owner.

1.4 REFERENCES

A. ASTM D 4355 - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc Type Apparatus; 2007.

B. ASTM D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles

C. ASTM D 4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity; 1999a (Reapproved 2009).

D. ASTM D 4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles; 2004 (Reapproved 2009).

E. ASTM D 4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles; 2008.

F. ASTM D 4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile; 2004.

G. ASTM D 4873 - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples; 2002 (Reapproved 2009).

H. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges from Construction Activities, current edition.

I. Stormwater Pollution Prevention Plan as updated by Contractor.

J. FHWA FLP-94-005 - Best Management Practices for Erosion and Sediment Control; Federal Highway Administration.

K. Idaho's Department of Environmental Quality (IDEQ) Catalog of Stormwater BMPs for Idaho Cities and Counties, most recent edition.

L. Oil Pollution Prevention Regulation 40 CFR Part 112.

M. Idaho Transportation Department Best Management Practices Manual.

## 1.5 PERFORMANCE REQUIREMENTS

A. General Requirements

1. Contractor shall provide all management, labor, material and equipment necessary to comply with the Construction General Permit (CGP), Idaho State Water Quality Standards, including, but not limited to:

   a. Preparing and managing the SWPPP document, site maps, and phasing diagrams

   b. Subcontractor agreements

   c. Delegation of authority forms

   d. Certification of SWPPP operators

   e. Submitting the Contractor's Notice of Intent (NOI) and tracking that each Operator has active and posted NOIs

   f. Coordinating with utilities or other secondary operators on erosion and sediment control items

   g. SWPPP Certification by all necessary parties

   h. Training Contractor's staff

   i. Selecting, installing, and maintaining temporary erosion and sediment control BMPs that are shown on the draft and final SWPPP or that are required to control erosion and sediment during construction.

   j. Temporary and permanent slope stabilization. Multiple mobilization of temporary and permanent slope stabilization shall be anticipated to comply with the CGP.

   k. Updates to the SWPPP document, site maps, and stabilization exhibit as necessary. Also includes providing Engineer with a copy of all updates and reports as they are completed.

   l. Complete and update logs required by the CGP, as necessary.

   m. Preparing and certifying inspection reports

   n. Control of sediment and dust

   o. Removal of BMPs no longer required in stabilized areas

   p. Self-reporting of any known sediment discharge offsite

   q. Turbidity testing (as required)

   r. Filing of contractor Notice of Termination (NOT)

   s. All other work required by the CGP and/or the SWPPP

   t. Providing the Owner a complete copy of the final SWPPP paperwork upon completion of the project.

B. If there is a discrepancy among the project specifications, the CGP and/or the SWPPP, the requirements in the CGP and/or SWPPP (whichever is more stringent) shall govern.

C. Comply with all requirements of U.S. Environmental Protection Agency for erosion and sedimentation control, as specified for the National Pollutant Discharge Elimination System (NPDES), Phases I and II, under requirements for the 2017 Construction General Permit (CGP), whether the project is required by law to comply or not.

D. The Contractor is responsible for the site and permit coverage until final stabilization is established. This includes, but is not limited to, inspections, turbidity testing, temporary stabilization, BMP maintenance, adding BMPs, maintenance of slopes, repairing BMPs that are damaged by the public or through winter maintenance activities, updating the SWPPP, and any other item required to comply with the requirements of this section.

E. Comply with all more stringent requirements of the project Stormwater Pollution Prevention Plan (SWPPP).

F. Comply with the Oil Pollution Prevention Regulation 40 CFR Part 112. The Contractor shall prepare a SPCC plan, at no additional cost to the Owner, and include it in the SWPPP appendices.

G. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained (furnish all documentation required to obtain applicable permit) and all controls are installed and in working order.

H. Put preventive measures in place prior to disturbance of surface cover wherever feasible and before precipitation occurs.

I. Execute work by methods that minimize raising dust from construction and material handling operations. Do not cause runoff by excessively applying water for dust control.

J. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.

    1. Contractor shall comply with EPA's regulations regarding the Construction General Permit under NPDES.

    2. All construction activities shall be in compliance with the "Catalog of Storm Water Best Management Practices for Idaho Cities and Counties" by IDEQ.

    3. If refueling of equipment or storage of oil or other petroleum products will occur onsite, comply with 40 CFR 112 and Section 311.

    4. Under no circumstances shall it be acceptable for uncontrolled sediment to leave the construction site.

    5. Contractor is responsible for making sure all temporary erosion controls for a segment are in place and have been verified by the Engineer prior to breaking ground on any segment of the project.

    6. If temporary erosion controls are found to be unacceptable at any time in the project, either in its installation or maintenance, Engineer shall stop work until the problem is corrected. Any delays experienced due to improper erosion control shall be at the Contractor's expense. If

Contractor does not correct the problem immediately, the Owner will have it corrected by others and deduct the cost from the contract amount.

7. No off-site tracking will be allowed. Where local traffic is allowed throughout the site, a clean travel lane must be maintained.
8. Contractor shall not flush chlorinated waterlines into uncontrolled areas such as those near culverts, lakes, streams. Contractor shall dechlorinate waterlines prior to (or during) flushing and shall flush lines only in areas pre-approved by the Engineer.
9. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
10. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.

K. Water Control:

1. Grade site to drain.
2. Maintain excavations free of water.
3. Operate and maintain pumping equipment as required.
4. Protect site from puddling or running water.
5. Maintain water barriers, as required, to protect site from soil erosion.
6. Periodically inspect water control measures; corrective measures shall be promptly applied.
7. Turbidity testing is required whenever runoff leaving the site is visibly turbid.

L. Erosion Control:

1. Plan and execute construction by methods to control surface drainage from cut and fill, borrow material handling, and waste disposal areas.
2. Apply hydro-seed or mulch to disturbed areas.
3. Implement temporary measures, such as berms, dikes, and drains, to prevent water flow.
4. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
5. Prevent sediment from leaving the controlled site. Under no circumstances shall sediment be allowed to enter creeks or streams.
6. Inspect erosion control measures before breaking ground each day; corrective measures shall be immediately applied.

M. Erosion On Site:

1. Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.

2. Plan and execute construction by methods to control surface drainage from cut and fill, borrow material handling, and waste disposal areas.
3. Apply hydro-seed to disturbed areas.
4. Implement temporary measures such as berms, dikes, and drains, to prevent water flow.
5. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
6. Prevent sediment from leaving the controlled site. Under no circumstances shall sediment be allowed to enter surface water.
7. Inspect erosion control measures before breaking ground each day; corrective measures shall be promptly applied.
8. Control movement of sediment and soil from temporary stockpiles of soil.
9. Prevent development of ruts due to equipment and vehicular traffic.
1. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
2. If erosion occurs onsite, remove rills, gullies, and sediment deposits as soon as possible and repair and/or re-evaluate the effectiveness of BMPs.

N. Tracking Off-Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project or from tracking.

O. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on or near the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.

1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.

P. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.

1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.

Q. Open Water: Prevent standing water that could become stagnant.

R. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

S. BMPs shown in the draft SWPPP prepared by the Engineer is the minimum erosion control effort envisioned. In the event that the controls shown in the final SWPPP are not adequate to control site erosion and sedimentation, the

Contractor must provide additional controls at no additional expense to the Owner.

T. Temporary Soil Stabilization: The stabilization requirements in the CGP will be strictly enforced. The Contractor shall stage Work to minimize the disturbance of soils that will not be actively under construction. Soils that are disturbed will be stabilized within time periods outlined in the CGP. Contractor shall plan for multiple mobilizations of temporary stabilization to comply with this requirement.

1.6 SUBMITTALS

A. Contractor shall submit proposed stockpile and/or staging area locations and planned site control for review and approval.

B. The Contract provides a draft SWPPP for the Contractor's use. The draft SWPPP contains information about the project site characteristics, drainage patterns, and anticipated BMPs. The draft is based on the EPA's template for unauthorized states. A digital file will be provided upon Notice of Award. The draft SWPPP is for the Contractor's convenience. Use of the draft SWPPP does not transfer any risk or responsibility to the Owner or the Engineer.

C. The Contractor shall finalize the SWPPP. Prior to the preconstruction conference, the Contractor shall submit the final SWPPP for review for general conformance with the CGP. This review shall not release the Contractor from liability or fines resulting from an EPA or State inspection and/or audit. Once the SWPPP is approved by the Owner, the Contractor shall submit the Notice of Intent and SWPPP to the EPA. Ground-disturbing activities shall not occur until the 14-day EPA-review period is concluded.

D. The SWPPP is considered a living document and the Contractor should anticipate updating the document and modifying site controls as needed during the course of construction.

E. The SWPPP shall be certified by a Contractor's Representative meeting the definition of an Operator in the CGP. This will include, at a minimum, the Contractor and the Owner. Contractor is responsible for identifying any other Operators and assuring that they have certified the SWPPP and filed NOIs, if required.

F. Prior to initiating any construction activity, the Contractor shall designate a Water Pollution Control contact. Contact information including name, address, and telephone number shall be submitted to the Owner. The contact shall be certified by the Stormwater Erosion Education Program (SEEP), or other equivalent program approved by the Engineer. The contact shall be responsible for ensuring compliance with the Clean Water Act, the CGP, and the SWPPP, and shall be responsible for regular communication with the Engineer and Owner regarding erosion and sediment control issues.

1. The Panhandle Health District Stormwater & Erosion Education Program (SEEP) certification, Washington Department of Ecology (DOE) Certified Erosion & Sediment Control Lead (CESCL), and Idaho Transportation Department (ITD) "E. npdes" qualification are erosion and sediment control training programs that are preapproved.

## PART 2 - MATERIALS

2.1 MATERIALS

A. Best management practices (BMPs) products and materials shall be selected in accordance with the IDEQ Catalog of Stormwater BMPs for Idaho Cities and Counties, or as recommended.

B. Products for temporary slope stabilization where the permanent control is hydroseed or sod per the Plans are allowed as follows:

1. Bonded fiber matrix (BFM) applied at a rate of 3,500 pounds per acre minimum with the following mix characteristics: 90% thermally refined wood fiber, 10% blended multi-dimensional hydro-colloid based tackifier, and 10% - 13% moisture.

2. Type A3 ¾" crushed aggregate per Section 802 placed 3-inches thick minimum

3. Other submitted BMP, as approved.

## PART 3 - WORKMANSHIP

3.1 EXAMINATION

A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

B. The Contractor shall inspect the site at a minimum once every seven (7) days and within 24 hours of a storm event of 0.25 inches or greater. The day of the week will be selected at the pre-construction meeting. Inspections shall occur on the selected day in each week regardless of intermittent inspections. The Contractor shall coordinate the inspection with the Owner.

C. The Contractor shall correct all deficiencies identified during the inspection as soon as possible and no later than five (5) days after the inspection or prior to the next forecasted rain event, whichever is sooner.

3.2 PREPARATION

A. At all times, the NOI and project sign (as required by the CGP) shall be posted in a location that is readable from the public right of way. This board shall have the phone number of Contractor and Contractor's permit number clearly visible from the public right of way.

B. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

C. Phase work to stabilize exposed soils in accordance with the CGP. The Contractor should not assume hydroseeding of slopes will occur at one time. The Contractor either temporarily or permanently stabilizes slopes as they are completed and always in accordance with the time constraints in the CGP.

D. The public utility Work shall be included in the project SWPPP. The Contractor shall coordinate with the public utilities, as necessary, to complete project-wide inspections and updates to the utility portions of SWPPP.

3.3 SCOPE OF PREVENTIVE MEASURES

A. Contractor must stockpile or have in their possession erosion and sediment control measures that can be utilized to immediately minimize the discharge of pollutants offsite in an emergency situation including, but not limited to, a water line break or an unexpected storm event.

B. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.

C. Temporary soil stabilization criteria, as defined in the CGP, will be strictly enforced. The Contractor should plan for several mobilizations to apply mulch or other temporary stabilization BMPs. Soils left un-worked and disturbed longer than permitted in the CGP will not be permitted.

3.4 INSTALLATION

A. Fiber Wattles

1. See C3.2 for Fiber Wattle installation details.

2. Fiber Wattles shall be manufactured from rice straw, coir, or wood shavings and be wrapped in a tubular plastic netting. The netting shall be made from 85% high density polyethylene, 14% ethyl vinyl acetate and 1% color for UV inhibition. Fiber Wattles shall be 9 inches in diameter (+/- 1 inch), 25 feet long (+/- 0.5 feet) and weigh approximately 35 pounds (+/- 10%).

B. Silt Fences:

1. J-hook ends of silt fence uphill to prevent runoff from running around the end of silt fence.

2. At joints, wrap and secure ends of silt fence around a t-post to eliminate runoff passage through the joint.

3.5 MAINTENANCE

A. Inspect preventative measures at the frequency specified within the SWPPP and in accordance with IDEQ Catalog of Stormwater BMPs for Idaho Cities and Counties, or as recommended by other local entities or guidance documents.

B. Repair deficiencies immediately, in accordance with the project SWPPP and the CGP.

1. Complete corrective actions to correct all identified deficiencies in accordance with the project SWPPP and the CGP.

3.6 CLEAN UP

A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Owner.

B. Clean out temporary sediment control structures that are to remain as permanent measures.

C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

D. File Notice of Termination once site has been permanently stabilized, as approved by the Owner.

## PART 4 - MEASUREMENT AND PAYMENT

4.1 SECTION INCLUDES

A. Construction Site Management, by the lump sum: includes full compensation for all management, administration, materials, labor and equipment necessary for completing the Work described in this Section and all appurtenances not itemized in the Bid Schedule, including but not limited to all site controls as shown in the plans, and all other BMPs as required to comply with an approved SWPPP document.

1. Bid Schedule Payment Reference: 1001.4.1.A.1
2. Bid Schedule Description: Construction Site Management.

## DIVISION 1100 – TRAFFIC

Section 1103 – Construction Traffic Control

### Part 3 - WORKMANSHIP

3.1 GENERAL

**Add the following**;

L. Access shall be provided to adjacent properties to include the adjacent boat launch and parking lot at all times as indicated on the Drawings, except when it is impractical to carry on the construction and maintain traffic simultaneously, such as for the placing of asphalt concrete pavement. Restriction of access to adjacent properties must have prior approval of the Engineer and the Owner. Written notice must be given by the Contractor to the affected properties at least 48 hours prior to such restriction. Notification must include dates, times, detour routes, and all other pertinent information on the restriction.

M. Where parking is a hazard to through traffic or to the construction work, it shall be restricted entirely or, at a minimum, during the time when it creates a hazard. The Contractor shall be responsible for obtaining and placing “No Parking” signs in accordance with City and County code, and shall maintain the signs for as long as they are in operation. In the event that parked vehicles hinder construction, the Contractor is responsible for notifying the owner prior to removal, when the owner can be determined.

N. The Contractor shall designate a contact person responsible for maintenance of the traffic control devices on the project. The contact

person must be available by phone during non-working hours including nights, weekends, holidays, etc. The Contractor will be responsible for making such repairs as may be needed to maintain traffic accessibility and traffic control.

## SECTION 2010 MOBILIZATION

Delete this Section 2010 in its entirety and replace with the following:

### PART 1 GENERAL

1.1 SECTION INCLUDES

A. Mobilization consists of preparatory work and operations, including those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, for the establishment of offices, buildings, and other facilities necessary for work, for premiums on bond and insurance, and for other work and operations which must be performed or costs incurred before beginning production work on the various contract items. Mobilization costs for subcontracted and supplier work is included in this item.

B. Items which are not to be included in this item include but are not limited to:

1. Any portion of the Work covered by the specific Contract item or incidental Work which is to be included in a Contract item or items.

2. Profit, interest on borrowed money, overhead, or management costs.

### PART 2 MATERIALS

Not specified.

### PART 3 WORKMANSHIP

Not specified.

### PART 4 MEASUREMENT AND PAYMENT

4.1 Mobilization, by the lump sum Contract price for Mobilization.

A. Bid Schedule Payment Reference: 2010.4.1.A.1.
B. Bid Schedule Description: Mobilization … per lump sum (LS).

C. Partial payments for Mobilization will be made as follows:

1. When 5 percent of the total original Contract amount is earned from other Contract items, excluding amounts paid for materials on hand, 50 percent of the amount Bid for mobilization, or 5 percent of the total original Contract amount, whichever is the least, will be paid.

2. When 10 percent of the total original Contract amount is earned from other Contract items, excluding amounts paid for materials on hand, 100 percent of the amount Bid for mobilization, or 10 percent of the total original Contract amount, whichever is the least, will be paid.

3. When Substantial Completion is achieved, payment of any amount Bid for mobilization in excess of 10 percent of the total original Contract amount will be paid.

## SECTION 2060 MINOR CHANGES

Immediately following Section 2050, add a new Section 2060 as follows:

### PART 1 GENERAL

1.1 SECTION INCLUDES

C. A Minor Change consists of Work item(s) identified by the Engineer during construction that is not included or incidental to other pay items and results in a cost to the Owner. At the discretion of the Engineer, this procedure for Minor Changes may be used in lieu of a Change Order to the extent that the Contingent Sum is available.

D. The Work described in this Section shall be contingent upon its necessity as determined by the Engineer. At the discretion of the Engineer the amount identified in the bid schedule for Minor Changes may be partially or fully utilized during construction. The amount paid to the Contractor under this pay item shall be the aggregate total of all Minor Changes to the extent the Contingent Sum is available and may or may not be the entire amount of the pay item.

E. Minor Changes may not modify Contract Time.

1.2 PROCEDURE

A. The Engineer shall identify additional or extra work in the manner described in Article 11 of the General Conditions of the Construction Contract.

B. The price of the Minor Change(s) shall be determined either by negotiated proposal or by Work Change Directive in accordance with Article 11.03 of the General Conditions of the Construction Contract.

C. Once the cost and scope of the Work is determined by the Engineer to be conducive to Minor Changes, the Contractor shall be provided a Minor Change Order indicating the cost of the Work and other requirements as applicable. The Contractor shall sign and return the Minor Change Order to the Engineer.

1. For negotiated cost Minor Changes the Contractor shall sign and return the Minor Change Order prior to proceeding with the Work.

### PART 2 MATERIALS

NOT USED

### PART 3 WORKMANSHIP

NOT USED

## PART 4 MEASUREMENT AND PAYMENT

4.1 Use the following contingent sum Bid Item as indicated in the Bid Schedule. Includes all labor, material and equipment required to perform the work as specified.

A. Bid Schedule Payment Reference: 2060.4.1.A.1.
B. Bid Schedule Description: Minor Changes … per contingent sum (CS).

## SP1 - NOT USED

## SP 2 – CEMENT TREATED BASE

## PART 1 - GENERAL

1.1 SECTION INCLUDES

A. The work consists of constructing a cement treated base.

1.2 RELATED SECTIONS

A. SP3 Synthetic Turf Base Courses and Drainage System – 2 Lift System

1.3 REFERENCES

A. 2017 Idaho Standards for Public Works Construction

## PART 2 - MATERIALS

2.1 MATERIALS SHALL MEET THE FOLLOWING REQUIREMENTS OF THE FOLLOWING SECTIONS:

A. AASHTO M85, Type II Portland Cement

## PART 3 - WORKMANSHIP

3.1 CONSTRUCTION METHODS AND EQUIPMENT

A. The Contractor shall submit a detailed description of the construction methods and a list of equipment that will be used in the cement treatment process for review and comment by the Engineer.

B. No work shall begin on the cement treated base until a meeting has been conducted between the Contractor and the Engineer to review the construction methods and equipment.

3.2 PREPARATION OF AREA FOR CEMENT TREATED BASE

A. The subgrade shall then be brought to uniform grade and cross section in accordance with ISPWC Section 202. No work shall begin on the cement treated base until the Engineer has accepted the subgrade construction.

B. Only approved equipment will be permitted on the on the subgrade and perform the placement and blending of the materials.

C. A test section shall be constructed at the start of the Cement Treated Base operation and using the equipment that the Contractor will use in the Cement Treated Base operation.

D. Production work on the Cement Treated Base shall not begin until successful completion of the test section, as determined by the Engineer.

3.3 INCORPORATION OF CEMENT AND WATER

A. Air temperature shall be 45 degrees or higher to proceed with cement treatment process. Cement shall not be mixed with frozen

soil or when freezing temperatures are anticipated during the curing process.

B. Cement shall be applied uniformly at a rate of 5% of the dry weight of the material to be treated.

C. The equipment and method used shall ensure the uniformity of cement distribution within the full depth to be treated and that the actual weight of cement applied does not vary more than 5% from the specified rate.

D. Any equipment or method, which results in excessive loss or displacement of cement, the use of the equipment or method shall be immediately discontinued.

E. Cement which is lost or displaced by blowing, washing, or other causes before it is mixed or incorporated in the material to be stabilized shall be replaced by the Contractor at no cost to the Owner.

F. No equipment except that of watering and for applying and mixing the cement shall be permitted to pass over spread cement until after it is mixed into the materials to be stabilized.

G. Apply water evenly, if necessary, until optimum moisture content is achieved.

H. The rate at which cement shall be applied may be adjusted by the Engineer prior to placement depending on actual field conditions.

3.4 MIXING

A. The initial mixing of the cement, water and materials to be stabilized shall be started within two hours after the application of cement. Mixing shall continue until a homogenous mixture is obtained.

3.5 COMPACTION AND FINISHING

A. Immediately after the mixing has been completed, the mixture shall be spread to specified line, grade and cross section and the entire depth of the mixture shall be compacted to the grade and smoothness as shown in the Plans.

B. Final compaction shall be accomplished with a minimum of 10 passes of a pneumatic tire roller. Rolling shall continue until there is no appreciable reaction or yielding under the roller.

C. This compaction shall be obtained, and the surface brought to finished condition within 2 hours after water is applied. No section shall be left unworked for longer than 30 minutes during compaction. During the compacting, the surface of the mixture shall be maintained at proper grade and cross-section. Maintain moisture content within 1.5% of optimum.

D. Final finishing shall be accomplished by rolling, accompanied by light watering and reshaping to provide a finished surface free of hairline cracking and free of ridges.

3.6 SURFACE TOLERANCE

A. The finished surface of the cement treated base shall not vary by more than 0.04 foot from established grade and cross section at any point when tested with a 10-foot straightedge. The Contractor shall furnish the straightedge and operate it under the direction of the Engineer.

3.7 CURING AND PROTECTION

A. Immediately after the compaction and finishing of the cement treated base has been completed and while it is still moist, Contractor shall begin hydrating the surface through Contractor provided irrigation sprinklers.

## PART 4 - MEASUREMENT AND PAYMENT

4.1 Use one of the following unit price options as designated on the Bid Schedule. If required and not listed in the Bid Schedule, the following Bid Items are to be considered incidental to other bid items:

A. Portland Cement: By the ton.

1. Bid Schedule Payment Reference: SP2.4.1.A.1
2. Bid Schedule Description: Portland Cement for Cement Treated Base …ton (TON).

B. Cement Treated Base: By the square yard.

1. Bid Schedule Payment Reference: SP2.4.1.B.1
2. Bid Schedule Description: Cement Treated Base …square yard (SY).

## SP-3 SYNTHETIC TURF BASE COURSES AND DRAINAGE SYSTEM

### PART 1 - GENERAL

1.1 SUMMARY

A. Work Included: Crushed Aggregate Base Courses and Drainage System

B. Related work specified elsewhere:

1. Excavation / Earthwork
2. Cement Treated Base
3. Concrete
4. Irrigation
5. Synthetic Turf System

1.2 DESCRIPTION OF WORK

A. Provide and install the base courses, including top course and base course, for the synthetic turf and related appurtenances, including but not limited to drainage piping system and grade preparation ready to receive the synthetic turf.

1.3 QUALITY CONTROL AND ACCEPTANCE OF WORK

A. Synthetic Turf Base Planarity, Permeability and Compaction Requirements:

1. Completed Work of this section shall comply with the following:
   a. Compaction of sub-grade: per SP2 – Cement Treated Base.
   b. Permeability of 60 inches per hour.
   c. Planarity of sub-grade: tolerance of one quarter inch (1/4”) in ten feet (10’).
   d. Compaction of crushed aggregate base courses: shall be compacted to a minimum of 92%, and no more than 95%, Modified Proctor density.
   e. Surface tolerance of crushed aggregate base courses: not to exceed 1/4 inch over 10 feet and a maximum of ½" from design grade.

B. Testing Requirements:

1. Tests shall include compaction testing of each lift of base courses, measured at a minimum of 18 locations randomly spaced across the surface.
2. The base courses material shall be tested to verify that material meets the specified gradation & permeability requirements.
3. Prior to placing base courses, Contractor shall construct a minimum 10 ft by 10 ft test section over the CTB using the same materials, means and methods planned for the project and test compaction and permeability as outlined in this specification.
   a. If the testing demonstrates compliance with this specification, the Contractor may proceed with the full placement using the same materials, means and methods.
   b. If the testing fails to meet this specification, the Contractor shall modify its materials, means or methods as necessary in order to satisfactorily meet these specifications.
   c. The test section shall be constructed and tested not less than five (5) working days prior to the planned day for the entire rock placement.

4. Testing for the entire base course section shall be provided for every 10,000 SF of Synthetic Turf surface, as follows:
    a. Installed drainage properties to comply with the following:
        1) Testing Methods:
            a) For lab samples, ASTM D 2434-68(2006) “Standard Test Method for Permeability of Granular Soils (Constant Head)
            b) For field tests:
                1. ASTM F 2898, “Standard Test Method for Permeability of Synthetic Turf Sports Field Base Stone and Surface System by Non-confined Area Flood test Method.” – Test results shall exceed 60 inches per hour.
            c) Final approval of infiltration requirements are to be through field testing only.
            d) Methods not specifically listed above shall be submitted for approval.
5. Test compaction of base courses materials in place according to ASTM D1557, ASTM D 6938, as applicable.

C. Test results verifying compliance with compaction and permeability requirements shall be supplied to the Owner prior to the commencement of synthetic turf installation.

D. Contractor to provide surface planarity verification of the top course using a string line method in presence of synthetic turf contractor and owner.

1. A mason’s line held taught between two workman separated by a distance of approximately 40 feet, shall be placed directly on the finished surface, parallel to the direction of greatest slope. A third workman shall check for separations between the mason’s line and the finished surface that are equal to or greater than the tolerances specified.

2. Final crushed aggregate permeable base elevations shall conform to the lines and grades shown on the drawings. The measured grades shall not deviate more than (1/2”) from the planned grades and not vary more than (1/4") feet in 10 feet in any direction. Laser grading of the finish surface is mandatory.

3. Roller marks, tire tracks, footprints or other impressions on the finished surface shall be raked out where they are equal to or greater than the tolerances specified. Following long and short axis checking and corrections, the Contractor shall notify the Owner, that the finished surface is ready for inspection

4. The Contractor shall perform a final string line check along the long axis of the field in the presence of the Owner. Finished surface planarity shall be approved by the Owner prior to synthetic turf installation.

5. Damage to the finished surface planarity occurring after approval shall be corrected by the Contractor using the method described above.

1.4 SUBMITTALS

A. Product Data: Submittals required:

1. Permeable aggregate base material (25 lb sample) including sieve size analysis & source.

2. Subgrade/Trench Separation Barrier

3. HDPE pipe & fittings

4. 1” x 12” Panel Drains

**PART 2 - PRODUCTS**

2.1 PERIMETER DRAINAGE TRENCH SEPARATION BARRIER

A. The drainage trench soil subsurface is to be isolated from the installed field and drainage system above it with a geotextile/geomembrane placed across the entire surface of the field. This insures no mixing of the soil sub surface with the aggregate drainage system.

1. Separation fabric shall be laid and overlapped in accordance with the manufacturer's and project geotechnical engineer's written recommendations.

B. Subgrade/Trench Separation Barrier:

1. For permeable subgrade applications: Subgrade/Trench separation barrier shall be a 4oz. Non-Woven Geotextile – Mirafi 140N or approved equal

2. For Silty/Clayey subgrade applications where the fines content <35% and the Plasticity Index (PI) is < 20 – 4oz. Woven Geotextile – Mirafi 500X or approved equal

3. For plastic and moisture sensitive soils – 20 mil Woven Coated Polyethylene Geomembrane as manufactured by Brawler Industries, LLC.

2.2 PERFORATED FLAT DRAIN AND HDPE PERIMETER PIPING

A. All specific pipes are noted on the Contract Drawings

B. 4" through 10" solid wall and perforated drainpipe shall be smooth interior wall conforming to AASHTO M252.

C. 12" through 36" solid wall and perforated drainpipe shall be smooth interior wall conforming to AASHTO M294 Type S.

D. Fittings and couplers shall be split couplings or snap couplings manufactured by the same manufacturer as the corrugated polyethylene pipe.

E. Panel Drains shall be a 3-dimensional rigid HDPE (1" x 12" flat panel pipe), AdvanEdge, MultiFlow, or approved equal.

2.3 FIELD DRAIN BASIN

A. Basin shall be 24" Nyloplast Drain Basin, or an approved equal. Basin shall have solid lid and be buried to the top of the CTB depth.

2.4 CRUSHED AGGREGATE PERMEABLE BASE COURSES

A. Material to be clean with minimal fines as described in gradation table below.

B. Material to be minimum 100% fractured with at least one mechanical fracture per particle greater than ¼" sieve size. Rounded River Rock is not acceptable.

C. Base Course: Comply with the below criteria for ASTM #57 Stone, and the following gradation:

| Sieve Size | Percent Passing by Weight |
|---|---|
| 1 1/2" (37.5mm) | 100 |
| 1" (19mm) | 95-100 |
| 1/2" (12.5mm) | 25-60 |
| No. 4 (4.75mm) | 0-10 |
| No. 8 (2.36mm) | 0-5 |

D. Top Course: Comply with the below criteria for ASTM #89 Stone, and the following gradation:

| Sieve Size | Percent Passing by Weight |
|---|---|
| 1/2" | 100 |
| 3/8" | 85-100 |
| No. 4 | 10-30 |
| No. 8 | 0-10 |
| No. 16 | 0-5 |
| No. 200 (.074mm) | 0-2 |

1. Soft lime stones and shale materials are not acceptable.
2. Sulfate soundness test (ASTM C 88) and LA Abrasion Test (ASTM C 131) may be required depending upon source

| Test Method | Criteria |
|---|---|
| Sulfate Soundness (ASTM C 88) | Not to exceed 12% Loss |
| LA Abrasion (ASTM C 131) | Not to exceed 40 |

E. Aggregate material for bedding and backfill around the Perimeter Drainage System shall be ASTM #57 Crushed Stone and shall meet criteria D above.

**PART 3 - EXECUTION**

3.1 TRENCH SEPARATION BARRIER

A. The prepared trench soil subsurface is to be isolated from the installed field and drainage system above it with the specified separation barrier placed across the entire surface of the trench.

B. The subgrade surface shall be free from large stones; 3” or larger, and sharp objects that may puncture or tear the separation barrier.

C. The separation barrier shall be placed and overlapped in accordance with the Manufacturer’s written recommendations.

D. The trench separation barrier shall be continuous through the drainage trenches to insure separation of surrounding soil and drainage stone

3.2 PERFORATED HDPE DRAINAGE PIPE

A. Examine the areas and conditions under which the subsurface drainage system work is to be installed. Correct any and all conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until satisfactory conditions have been corrected.

B. EXCAVATION FOR PIPE

1. Excavation shall consist of the removal of all material of every description to the depths and grades designated on the plans and specified herein.
2. If the material at or below the designated grade for which the pipe is to be laid is unsuitable for pipe foundation, then the material shall be removed to such depths and widths as required and replaced with approved foundation material.
3. Excavation for installation of pipes shall be in trenches to the lines, grades and widths as per the Contract Drawings.

C. INSTALLATION

1. Grades and widths, the geotextile fabric shall be installed as per Manufacturer's Specification.
2. Perforated HDPE drainage pipe shall be installed according to recommended installation practices by the pipe manufacturer. Drain lines shall be installed to comply with drain line elevations noted on project plans.

3. Pipe laying work shall commence at the main collector line and shall proceed upgrade. Pipe shall be laid true to line and grade in such a manner as to assure a close concentric joint with the adjoining pipe.

4. Trenches shall be kept free of water and debris. Pipe shall not be laid when the condition of the trench or weather is unsuitable for such work.

5. Install Panel Drains as shown on Drawings.

6. At the completion of each drainage line installation, place a cap or plug in the up- stream end as to prevent unwanted material and debris from entering the pipe.

7. Plug the downstream manhole outlet to prevent stormwater from being discharged prior to installation of the synthetic turf. Stormwater collected in the manhole shall be pumped to existing grass infiltration.

D. INSPECTION

1. After installation of pipe, inspect to determine whether line displacement or other damage has occurred.

2. Make inspections after lines have been installed prior to backfilling, during the backfilling process, and again at the completion of backfilling. Backfill material shall conform to the material as specified in section 2.3 above.

3. If inspection indicated poor alignment, debris, displaced pipe, infiltration or other defects, take whatever steps are necessary to correct such defects at no additional cost the Owner.

3.3 INSTALLATION OF PERIMETER HDPE DRAINAGE PIPE AND CRUSHED AGGREGATE PERMEABLE BASE

A. Place permeable base materials in layers not more than 6 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

1. Minimum nominal compacted thickness of base layer - 4 inches. Minimum nominal compacted to the topping stone layer – 2 inches.

B. Place materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact permeable base materials to the following percentages of maximum dry unit weight according to ASTM D 1557:

1. Crushed aggregate permeable base material shall be placed with adequate moisture content to prevent segregation of the particles during grading.

2. Care shall be taken during placement and compaction of the crushed aggregate permeable base material in order to insure that the cement treated base is not damaged.

3. Contractor to refer to compactions requirements as outlined in section 1.3 above.

D. The finished elevations of the crushed aggregate permeable base shall meet all requirements as outlined in sections 1.3 and 1.4 above.

3.4 FIELD BOXES

A. Install field boxes as required for all field appurtenances such as irrigation, quick coupler valves, electric outlets, etc. as specified elsewhere and as detailed.

B. Backfill around field boxes with crushed aggregate permeable base material in lifts not to exceed 6 inches in loose depth and compact backfill using methods approved by the Geotechnical Engineer.

1. Required compaction percentages around field boxes shall match requirements as outlines in section 1.3 above.

## PART 4 - MEASUREMENT AND PAYMENT

4.1 :

A. Synthetic Turf - Base Course:

1. Bid Schedule Payment Reference: SP3.4.1.A.1
2. Bid Schedule Description: –Synthetic Turf Base Course … cubic yard (CY) per plan.

B. Synthetic Turf - Top Course:

1. Bid Schedule Payment Reference: SP3.4.1.B.1
2. Bid Schedule Description: Synthetic Turf - Top Course … cubic yard (CY) per plan.

C. Field Drain Pipe - 12-inch Perforated Flat Drain: By the linear foot

1. Bid Schedule Payment Reference: SP3.4.1.C.1
2. Bid Schedule Description: Field Drain Pipe - 12-inch Perforated Flat Drain…linear foot (LF).

D. Field Drain Pipe - 12-inch Perforated Pipe: By the linear foot. Payment to be full compensation for all material, labor and equipment necessary to complete work including excavation, installation, geotextile, dewatering and backfill. Includes all trenching and rock drainage material up to the CTB elevation.

1. Bid Schedule Payment Reference: SP3.4.1.D.1
2. Bid Schedule Description: Field Drain Pipe - 12-inch Perforated Pipe … linear foot (Lf).

E. Field Drain Pipe - 18-inch Perforated Pipe: By the linear foot. Payment to be full compensation for all material, labor and equipment necessary to complete work including excavation, installation, geotextile, dewatering and backfill. Includes all trenching and rock drainage material up to the CTB elevation.

1. Bid Schedule Payment Reference: SP3.4.1.E.1
2. Bid Schedule Description: Field Drain Pipe - 18-inch Perforated Pipe … linear foot (LF).

F. Field Drain Basin: By each.

1. Bid Schedule Payment Reference: SP3.4.1.F.1
2. Bid Schedule Description: Field Drain Basin …each (EA).

G. Field Fine Blading / Pad Prep: incidental to Items SP-3.4.1.A.1 and SP-3.4.A.2.

## SP-4 INFILLED SYNTHETIC TURF

## PART 1 GENERAL

### 1.1 SCOPE OF WORK

Furnish all labor, materials, tools and equipment necessary to supply install, all synthetic turf materials, in accordance with the manufacturer's installation instructions, and in accordance with all approved shop drawings.

A. Prior to order of materials, submit the following:
    1. Product Data, including Independent Test Lab Results
    2. Installation Details
    3. Sample Warranty
    4. Field layout and striping plans
    5. Installer Qualifications
    6. Details on installation methods
B. Prior to the beginning of installation, the turf manufacturer shall inspect the base courses and supply a Certificate of Base Courses Acceptance for the purpose of obtaining manufacturer's warranty for the finished synthetic turf..
C. Prior to Final Completion, submit three (3) copies of Maintenance Manuals, which will include necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and striping.

### 1.2 SHOP DRAWINGS

A. Shop drawings shall be prepared at the scale of the construction documents and contain all pertinent information regarding installation for approval prior to the manufacturing and shipment of materials.
B. Shop drawings for:
    1. Installation details; edge detail, goal post detail, other inserts and covers, etc.
    2. Striping plan; layouts showing any field lines, markings and boundaries, and field logos per project drawings.

### 1.3 QUALITY ASSURANCE

A. Turf Installer Experience: The synthetic turf installer shall have manufactured and installed at least five (5) acceptable installations of sports fields in similar scale within the past five (5) years of synthetic turf products.

    The Turf Installer shall employ only qualified, experienced supervisors and technicians skilled in the installation of the specified system.

B. Warranty: The warranty shall guarantee the usability and playability of the synthetic turf system for its intended uses for an eight (8) year period commencing with the date of Substantial Completion.

1. The warranty submitted must have the following characteristics:
    a. Must provide coverage for eight (8) years from the date of Substantial Completion.
    b. Must warrant materials and workmanship.
    c. Must verify through a third party that the materials installed meet or exceed the product
    d. Must have a provision to either make a cash refund or repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable service.
    e. Must be a manufacturer's warranty from a single source covering workmanship and all self-manufactured or procured materials.
    f. Provide a full eight-year third party insured warranty on the synthetic turf installation with an aggregate coverage of $1,000,000.

## PART 2 MATERIALS

### 2.1 MATERIALS

Materials shall be Matrix® with Helix shape memory technology as manufactured by Hellas Construction, Inc., infilled with natural rubber infill harvested from the rubber of Havea Brasilensis, incorporating cork of the Quercus Suber tree, or approved equal.

## PART 3 WORKMANSHIP

### 3.1 GENERAL

A. The installation shall be performed in full compliance with approved shop drawings.

B. Only factory-trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the synthetic turf manufacturer's installation supervisors shall undertake the placement of the system.

C. The surface to receive the synthetic turf shall be inspected and certified by the turf manufacturer as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

3.2 INSTALLATION

All Work shall be performed in accordance with the Contract Documents, shop drawings, and manufacturer's installation requirements.

A. Field markings and decorations shall be installed in accordance with approved project shop drawings.

3.3 CLEAN UP

A. All usable remnants of new material shall become the property of the Owner.

B. Surfaces, recesses, enclosures, etc., shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for use no later than the specified Contract Times.

## PART 4 MEASUREMENT AND PAYMENT

4.1 SECTION INCLUDES

A. Infilled Synthetic Turf System: Measurement and payment shall be by the Square Foot. Work includes full compensation for all materials, labor and equipment necessary for completing the installation of the synthetic turf system from the top surface of top course aggregate upward including shock pad, synthetic turf with striping, infill material, and nailer board. The warranty is incidental to this item.

1. Bid Schedule Payment Reference: SP4.4.1.A.1
2. Bid Schedule Description: Install Synthetic Turf System by square foot (SF).

END OF SECTION

## SP-5 - SYNTHETIC TURF ALTERNATE #1

This Alternate #1 consists of modifying the Contract Documents to delete SP4 – Part 2, Materials in its entirety and replace with this Section, SP5 – Synthetic Turf Alternate #1. Liquidated damages and all other terms and conditions of the Contract remain in full force and effect. Acceptance of this Alternate does not modify any other Bid items included in Schedule A – Base Bid. Acceptance of this Alternate deletes Bid Schedule Payment Reference: SP4.4.1.A.1 and replaces it with Schedule B – Alternate #1.

## PART 2 - MATERIALS

2.1 ALTERNATE SYNTHETIC TURF SYSTEM,

A. APPROVED SYNTHETIC TURF PRODUCTS

1. Astro Turf, Contact: Steve Webb, Coast to Coast Turf, 5816 S Thomas Mallen Rd Cheney, WA 99004, Mobile: 509 953-16078; Product: Astroturf Rhino Blend – Monofilament and slit film blend (2" Pile Height).

2. SprinTurf, Contact: Tom Burlingame, SprinTurf, 4777 Exeter St., West Linn, OR 97068 Mobile (503) 318-9448; Product: SprinTurf Ultrablade DFE Extreme 46 (non-thatch) – Monofilament and slit film blend. (2" Pile Height).

3. Shaw Sports Turf, Contact: Kevin Senf, Shaw Sports Turf, 19312 205th St E Orting, WA 98360, Mobile: 512-627-2220; Product: Shaw Sports Turf Legion HP (2" Pile Height).

4. Hellas Construction, Contact: Justin Rose, Hellas Construction, 23104 57th Ave West, Mount Lake Terrace, WA 98043, Mobile: (425) 248-8779; Product: Hellas Fusion Helix 46 (2" Pile Height).

B. All components of the synthetic turf system and their installation methods shall be designed and manufactured primarily for outdoor athletic fields. The materials as specified shall be able to withstand full climatic exposure in Northern Idaho and compatible with the related systems detailed in the Contract documents.

C. The primary pile fiber shall be 100% polyethylene athletic quality yarn specifically designed All components shall be resistant to weather, insect infestation, rot, fungus, mildew, ultraviolet light and heat degradation and shall be non-toxic.

D. The synthetic turf system shall have the basic characteristic of a flow-through drainage system allowing free movement of surface water through the turf, where such water may flow to the sub-base and into the field drainage system. The permeability of the synthetic turf system (with infill) shall be a minimum of twenty (20) inches per hour. Certified test results will be required from a City-approved testing laboratory.

E. The synthetic turf to be included in the project should meet or exceed the specifications as listed:

F. Color of the synthetic turf to be approved by the City's Representative. The field is intended to be one consistent green color (no alternating green panels), and a brown color for baseball and soccer infields. Fiber used for baseball and softball infields, lines, and markings shall be of the same composition as that used for the green areas.

G. The turf shall be delivered in 15-foot wide rolls with the four-inch (4") white football, (4") yellow soccer, and (4") baseball/ lines tufted into roll, when applicable. The rolls shall be of sufficient length to go from touch line to touch line. Head seams, between the touch lines, will not be acceptable.

H. As applicable, provide game markings as follows: football, soccer, lacrosse 4”x4” layout tick marks, and related markings shall be cut in and glued in accordance with Synthetic Turf System Provider’s recommendations.

I. All synthetic turf systems options shall meet or exceed the following minimum specifications and requirements for a dual fiber, slit-film and monofilament combination fibers tufted into a primary backing with a secondary backing and resilient infill system consisting of cork granules and silica sand.

| Item | ASTM | Property | |
|---|---|---|---|
| 1. | D418 | Yarn Denier/Ply (Slit Film) | 5,000/1 |
| 2. | D418 | Yarn Denier/Ply (Mono) | 10,000/6 |
| 3. | D418 | Pile weight (total) | 46 oz/sq yard |
| 4. | D418 | Primary Backing | 7 oz/sq yard |
| 5. | D418 | Secondary Backing | 16 oz/sq yard |
| 6. | D418 | Total Weight | 66 oz/sq yard |
| 7. | D418 | Pile Height | 2 inch |
| 8. | D1335 | Tuft Bind | 8 lbs |
| 9. | D1682 | Grab/Tear Strength | 200 lbs |
| 10. | D2858 | Pill Burn | Pass |

## 2.2 SYNTHETIC TURF INFILL MATERIALS

A. A resilient infill system, consisting of a typically formulated mixture of cork and sand engineered to provide the look, feel, footing and shock absorption of a natural grass field in ideal conditions. Cork and sand ratio per the vendor to meet the minimum specifications required.

B. Cork Granules. Greenplay Organics PFC: Pure Cork Performance Infill, or approved equal. Particle Size: 1 – 2.5 mm www.greenplayusa.com

C. Sand Particulate. The sand provided as a component of the infill mixture shall be rounded or sub-angular washed and dried so as to minimize abrasion to the athlete and synthetic grass fibers.

| Sieve Size | Percent Retained |
|---|---|
| 1. #16 | 0%-5% |
| 2. #20 | 10%-20% |
| 3. #30 | 50%-70% |
| 4. #40 | 15%-25% |
| 5. #50 | 0%-10% |
| 6. #100 | 0%-5% |
| 7. Pan | 0%-2% |

## 2.3 SYNTHETIC TURF SHOCK PAD

A. Brock ShockPad Series 17mm or approve equal. www.brockusa.com

## SP6 - CHAIN-LINK FENCES & GATES

## PART 1 - GENERAL

1.1 SUMMARY
- A. Fence framework, fabric, and accessories.
- B. Excavation for post bases; concrete foundation for posts.
- C. Manual gates and related hardware.
- D. Baseball & Softball backstop netting posts.
- E. Football security netting posts.

1.2 RELATED SECTIONS
- A. Section 703 – Cast-in-Place Concrete

1.3 ACTION SUBMITTALS
- A. Product Data: For each type of product.
    1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes of the following:
        a. Fence and gate posts, rails, and fittings.
        b. Chain-link fabric, reinforcements, and attachments.
        c. Accessories: Privacy slats, barbed wire, barbed tape if applicable.
        d. Gates and hardware.
- B. Shop Drawings: For each type of fence and gate assembly.
    1. Include plans, elevations, sections, details, and attachments to other work.
    2. Include accessories, hardware, gate operation, and operational clearances.
- C. Samples for Initial Selection: For each type of factory-applied finish.
- D. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:
    1. Polymer-Coated Components: In 6-Inch (150-mm) lengths for components and on full-sized units for accessories.
- E. Delegated-Design Submittal: For structural performance of chain-link fence and gate frameworks, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For professional engineer, testing agency, and factory-authorized service representative.
- B. Product Certificates: For each type of chain-link fence, and gate.
- C. Product Test Reports: For framework strength according to ASTM F1043, for tests performed by a qualified testing agency.
- D. Field quality-control reports.
- E. Sample Warranty: For special warranty.

1.5 QUALITY ASSURANCE
- A. Manufacturer’s Qualifications: Company specializing in manufacturing products specified in this section, with not less than (5) five years of documented experience.

B. Installer's Qualifications: Installer specializing in the installation of products and work specified in the section
C. Testing Agency Qualifications: For testing fence grounding; member company of NETA or an NRTL.
    1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

1.6 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions of field measurements.

1.7 WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
    1. Failures include, but are not limited to the following:
        a. Failure to comply with performance requirements.
        b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
    2. Warranty Period: Contractor shall warrant work as provided by the General and Supplementary conditions and Division 01 Specifications.

## PART 2 – MATERIALS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Chain-link fence and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to ASCE/SEI 7.
B. Lighting Protection System: Maximum resistance-to-ground value of 25 ohms at each grounding location along fence under normal dry conditions.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle according to "CLFMI Product Manual" and requirements indicated below:
    1. Fabric Height: As indicated on Drawings and per Table 1.
    2. Steel Wire for Fabric: Wire diameter of 0.148 inch (3.76mm), 9-Gauge.
        a. Mesh Size: 2 inches (50mm).
        b. Zinc-Coated Steel Fabric: ASTM A392 hot dipped galvanized before or after weaving.
            i. Class I – 1.2 oz/$ft^2$ (366 g/$m^2$)
    3. Selvage: Knuckled at both selvages (Top and Bottom)
B. Substitutions or equivalent products shall be in accordance with Division 01 Specifications.

2.3 STEEL FENCE FRAMEWORK

A. Round Steel Pipe and Rail: ASTM F1043 Group IA Heavy Industrial Fence Framework, schedule 40 hot dipped galvanized pipe per ASTM F1083. Exterior hot dipped zinc coating minimum average 1.8oz/$ft^2$. Regular Grade Strength.
    1. Fence Height: As indicated on Drawings and per Table 1

2. Line Post: Refer to Table 1
3. End, Corner, Pull Post: Refer to Table 1
4. Top brace, bottom, and intermediate rails, 1.660 in. (42.2mm) O.D., 2.27 lbs./ft (3.38kg/m).

***TABLE 1***

| Fence Fabric Height | Footing Depth (Below Grade) | Footing Diameter * | Line Post | End Post | Terminal Post |
|---|---|---|---|---|---|
| 6 foot | 36-inch | 18-inch | 1 7/8" O.D. | 1 7/8" O.D. | 1 7/8" O.D. |
| 8 foot | 36-inch | 18-inch | 2 3/8" O.D. | 2 7/8" O.D. | 2 7/8" O.D. |
| 12 foot | 48-inch | 24-inch | 3 1/2" O.D. | 3 1/2" O.D. | 3 1/2" O.D. |
| Football Security Netting Post (40ft. Ht. Above Grade) | 12'-6" | 36-inch | 7" O.D. | 7" O.D. | 7" O.D. |
| Baseball Backstop Netting Post (40ft. Ht. Above Grade) | 12'-6" | 36-inch | 6 5/8" O.D. | 6 5/8" O.D. | 6 5/8" O.D. |
| Softball Backstop Netting Post (30ft. Ht. Above Grade) | 12'-6" | 36-inch | 6 5/8" O.D. | 6 5/8" O.D. | 6 5/8" O.D. |

** (Rebar Reinforcement Minimum Requirements: (4) #4 Verticals and #3 Ties at 12" O.C. Maximum.)*

2.4 TENSION WIRE

A. Metallic-Coated Steel Wire: 0.177-inch (4.5mm) diameter, marcelled tension wire according to ASTM A817 or ASTM A824, with the following metallic coating:
    1. Type II: Zinc coated hot dipped galvanized, with the following minimum coating weight.
        a. Matching chain-link fabric coating weight.

2.5 SWING GATES

A. General: ASTM F900 for gate posts and single and double swing gate types.
    1. Gate Leaf Width(s): As indicated on Drawings
    2. Framework Member Sizes and Strength: Based on gate fabric height as indicated on Drawings.
B. Pipe and Tubing:
    1. Zinc-Coated Steel: ASTM F1043 and ASTMF1083; hot dipped galvanized to match coating and finish of framework.
    2. Gate Posts: Round tubular steel.
    3. Gate Frames and Bracing: Round tubular steel.
C. Frame Corner Construction: Welded.

D. Extended Gate Posts and Frame Members: Fabricate gate posts and frame end members to extend zero inches (00mm) above top of chain-link fabric at both ends of gate frame.
E. Hardware:
    1. Hinges: 180-degree swing as indicated on Drawings.
    2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
    3. Padlock and Chain: Padlock(s) provided by owner.

2.6 FITTINGS

A. Provide fittings according to ASTM F626.
B. Post Caps: Provide for each post.
    1. Provide line post caps with loop to receive top rail.
C. Rail and Brace Ends: For each gate, corner, pull, and end post.
D. Rail Fittings: Provide the following:
    1. Top Rail Sleeves: Round steel tubing, not less than 6-inches (152mm) long.
    2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails to posts.
E. Tension and Brace Bands: Pressed Steel.
F. Tension Bars: Aluminum, length not less that 2-inches (50mm) shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
G. Truss Rod Assemblies: Hot dipped galvanized after threading rod and turnbuckle or other means of adjustment.
H. Tie Wires, Clips, and Fasteners: According to ASTM F626.
    1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:
        a. Hot Dipped Galvanized Steel: 0.106-inch (2.69mm) diameter wire matching coating thickness of chain-link fence fabric.
I. Finish:
    1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2oz/sq. ft. (366 g/sq. m) of zinc.
    2. Aluminum: Mill Finish

2.7 GROUNDING MATERIALS

A. Comply with requirements in Section 260526 “Grounding and Bonding for Electrical Systems.”
B. Connectors and Grounding Rods: Listed and labeled for complying with UL467.
    1. Connectors for Below-Grade Use: Exothermic welded type.
    2. Grounding Rods: Copper-clad steel, 5/8 by 96-inches (16 by 2440mm).

## PART 3 – WORKMANSHIP

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for a certified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
    1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet (152m) or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

A. Install chain-link fencing according to ASTM F567 and more stringent requirements specified.
    1. Install fencing on established boundary lines inside property line.
B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil. Coordinate with Cement Treated Base (CTB) installation.
C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil. Coordinate with Cement Treated Base (CTB) installation.
    1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
    2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
        a. Concealed Concrete: Place top of concrete 2-inches (50mm) below grade to allow covering with surface material. Do not stretch fabric until concrete foundation has cured a minimum of seven days.
        b. Post Embed Depth: Minimum embed depth shall be 2’-6” in footing.
D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F567 and terminal pull posts at changes in horizontal or vertical alignment as indicated on Drawings. For runs exceeding 500 feet (152m), space pull posts an equal distance between corner or end posts.
E. Line Posts: Space line posts as indicated on Drawings. If not indicated, space uniformly at 10 feet (3m) on center.
F. Post Bracing and Intermediate Rails: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
    1. Locate horizontal braces at mid-height of fabric 72-inches (1830mm) on 12ft. fences. Install so posts are plumb when diagonal rod is under proper tension.
G. Top Rail: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
H. Intermediate and Bottom Rails: Secure to posts with fittings.
I. Chain-Link Fabric: Apply fabric to field side of enclosing framework. Leave 2-inch (50mm) bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15-inches (380mm) on center.
K. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180-degrees, and attach other end to chain-link fabric according to ASTM F626. Bend ends of wire to minimize hazards to individuals and clothing. All wrapped wire twists should be opposite fabric side.
    1. Maximum Spacing: Tie fabric to line posts at 12-inches (300mm) on center and to braces at 24-inches (610mm) on center.
L. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite fabric side.

3.4 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-site items in concrete for anchorage. Adjust hardware for smooth operation.

3.5 GROUNDING AND BONDING

A. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems".
B. Fence and Gate Grounding:
    1. Ground for fence and fence posts shall be a separate system from ground for gate and gate posts.
    2. Install ground rods and connections at maximum intervals of 1,500 feet (450m).
    3. Fences within 100 feet (30m) of Buildings, Structures, Walkways, and Roadways:
        a. Ground at maximum intervals of 750 feet (225m).
    4. Ground fence on each side of gates and other fence openings.
        a. Bond metal gates to gate posts.
        b. Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18-inches (457mm) below finished grade.
C. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a ground rod located a maximum distance of 150 feet (45m) on each side of crossing.
D. Fences Enclosing Power Distribution Equipment: Ground according to IEEE C2 unless otherwise indicated.
E. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6-inches (152mm) below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.
    1. Make grounding connections to each barbed wire strand with wire-to-wire connectors designed for this purpose.
    2. Make grounding connection to each barbed tape coil with connectors designed for this purpose.
F. Connections:
    1. Make connections with clean, bare metal at points of contact.

2. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
3. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
4. Make above-grade ground connections with mechanical fasteners.
5. Make below-grade ground connections with exothermic welds.
6. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

G. Bonding to Lightning Protection System: Ground fence and bond fence grounding conductor to lighting protection down conductor or lightning protection grounding conductor according to NFPA 780.
H. Comply with requirements in Section 264113 “Lightning Protection for Structures”.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests.
B. Grounding Tests: Comply with requirements in Section 264113 “Lightning Protection for Structures.”
C. Prepare test reports.

3.7 ERECTION TOLERANCES

A. Maximum Variation from Plumb: 1/4”
B. Maximum Offset from True Position: 1-inch
C. Components shall not infringe adjacent property lines.

3.8 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly. Free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
B. Automatic Gate Operator: None
C. Lubricate hardware and other moving parts.

3.9 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner’s maintenance personnel to adjust, operate, and maintain chain-link fences and gates.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 SECTION INCLUDES:

A. 6ft Ht. Galvanized Chain-link Fence – Includes all labor, materials, and equipment to install chain-link fence(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.1.A
    2. Bid Schedule Description: 6ft Ht. Galvanized Chain-link Fence

4.2 SECTION INCLUDES:

A. 8ft Ht. Galvanized Chain-link Fence – Includes all labor, materials, and equipment to install chain-link fence(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.2.A

2. Bid Schedule Description: 8ft Ht. Galvanized Chain-link Fence

4.3 SECTION INCLUDES:

A. 12ft Ht. Galvanized Chain-link Fence – Includes all labor, materials, and equipment to install chain-link fence(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.3.A
    2. Bid Schedule Description: 12ft Ht. Galvanized Chain-link Fence

4.4 SECTION INCLUDES:

A. 6ft Ht. x 16ft Wide Double Swing Chain-link Gate – Includes all labor, materials, and equipment to install chain-link gate(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, stops, latches, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.4.A
    2. Bid Schedule Description: 6ft Ht. x 16ft Wide Double Swing Chain-link Gate

4.5 SECTION INCLUDES:

A. 8ft Ht. x 4ft Wide Single Swing Chain-Link Gate – Includes all labor, materials, and equipment to install chain-link gate(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, stops, latches, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.5.A
    2. Bid Schedule Description: 8ft Ht. x 4ft Wide Single Swing Chain-Link Gate

4.6 SECTION INCLUDES:

A. 8ft Ht. x 14ft Wide Double Swing Chain-link Gate – Includes all labor, materials, and equipment to install chain-link gate(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, stops, latches, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.6.A
    2. Bid Schedule Description: 8ft Ht. x 14ft Wide Double Swing Chain-link Gate

4.7 SECTION INCLUDES:

A. 8ft Ht. x 8ft Wide Double Swing Chain-Link Gate – Includes all labor, materials, and equipment to install chain-link gate(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, stops, latches, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.7.A
    2. Bid Schedule Description: 8ft Ht. x 8ft Wide Double Swing Chain-Link Gate

4.8 SECTION INCLUDES:

A. 12ft Ht. x 14ft Wide Double Swing Chain-link Gate – Includes all labor, materials, and equipment to install chain-link gate(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, stops, latches, and footings. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP6.4.8.A

2. Bid Schedule Description: 12ft Ht. x 14ft Wide Double Swing Chain-link Gate

4.9 SECTION INCLUDES:

A. 12ft Ht. x 4ft Wide Single Swing Chain-Link Gate – Includes all labor, materials, and equipment to install chain-link gate(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, stops, latches, and footings. Pay item shall be per linear foot.
   1. Bid Schedule Payment Reference: SP6.4.9.A
   2. Bid Schedule Description: 12ft Ht. x 4ft Wide Single Swing Chain-Link Gate

4.10 SECTION INCLUDES:

A. 12ft Ht. x 8ft Wide Single Swing Chain-Link Gate – Includes all labor, materials, and equipment to install chain-link gate(s) per plans. Includes all associated hardware, fasteners, connectors, fabric, rails, posts, stops, latches, and footings. Pay item shall be per linear foot.
   1. Bid Schedule Payment Reference: SP6.4.10.A
   2. Bid Schedule Description: 12ft Ht. x 8ft Wide Single Swing Chain-Link Gate

4.11 SECTION INCLUDES:

A. Football Security Netting Posts (30ft. Above Grade) – Includes all labor, materials, and equipment to install football security netting posts. Includes survey, layout, excavation, footings, posts, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
   1. Bid Schedule Payment Reference: SP6.4.11.A
   2. Bid Schedule Description: Football Security Netting Posts (30ft. Above Grade)

4.12 SECTION INCLUDES:

A. Baseball Backstop Netting Posts (40ft. Above Grade) – Includes all labor, materials, and equipment to install baseball backstop netting posts. Includes survey, layout, excavation, footings, posts, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
   1. Bid Schedule Payment Reference: SP6.12.A
   2. Bid Schedule Description: Baseball Backstop Netting Posts (40ft. Above Grade)

4.13 SECTION INCLUDES:

A. Softball Backstop Netting Posts (30ft. Above Grade) – Includes all labor, materials, and equipment to install softball backstop netting posts. Includes survey, layout, excavation, footings, posts, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
   1. Bid Schedule Payment Reference: SP6.13.A
   2. Bid Schedule Description: Softball Backstop Netting Posts (30ft. Above Grade)

END OF SECTION

## SP7 - STEEL HELICAL PIERS

### PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work of this section consists of furnishing and installing steel Helical Piers® manufactured by the A.B. Chance Company, Centralia, Missouri or approved substitute.
B. Steel Helical Piers® shall be designed and installed to resist the unfactored design loads as shown on Sheet S-3.0. Reference the geotechnical report for the site dated January 20, 2020 prepared by Allwest Testing for additional information on the Helical Piers.

1.2 QUALITY ASSURANCE

A. Installer Qualifications: Installation shall be done by an A.B. Chance Company or approved substitute authorized installation contractor. Proof of current certification with the A.B. Chance Company or approved substitute shall be submitted to the Owner prior to starting installation. Verification may be obtained from Rocky Mountain Steel Foundations Inc. 406-756-PIER (7437)
B. A qualified inspector shall be present during Helical Pier® installation as requested by the Owner.
C. Welding: Meet requirements of AWS “Structural Welding Code,” D1.1, latest edition. All welders shall be AWS certified.
D. Steel Helical Piers® as specified shall be manufactured by a facility whose quality control systems comply with ISO (International Organization of Standardization) 9001 requirements. Certificates of Registration denoting ISO Standards Number shall be presented upon request to the Owner.

1.3 SUBMITTALS

A. Submit shop drawings indicating shaft and helix sizes, and include manufacturer's catalog cut and data sheets.

### PART 2 - PRODUCTS

2.1 MATERIAL

A. The steel Helical Piers® shall be International Code Council listed. Installing contractor shall furnish evidence to the Owner by means of the ICC Evaluation Report.
B. Pier Shafts (Lead Section and Extensions):
    1. The 1.5 inch (38.1 mm) round cornered square (RCS) solid steel shafts shall conform to the general requirements of ASTM A29 and the following descriptions:
        a. Modified medium carbon steel grade (similar to ASTM 1044) with improved strength due to fine grain size and structure having a torsional strength rating of 5,700 ft.-lbs. (7.46 kN-m)(760 kgf-m), or

b. High strength low alloy (HSLA), low to medium carbon steel grade (similar to ASTM 1530) with improved strength due to fine grain size and structure having a torsional strength rating of 7,000 ft.-lbs (9.49 kN-m)(968 kgf-m).

2. The 1.75 inch (44.5 mm) round cornered square (RCS) solid steel shafts shall conform to the general requirements of ASTM A29 and the following descriptions:
    a. High strength low alloy (HSLA), low to medium carbon steel grade (similar to AISI 1530) with improved strength due to fine grain size and structure having a torsional strength rating of 11,000 ft.-lbs (13.6 kN-m)(1,380 kgf-m).
3. The 2.0 inch (50.8 mm) round cornered square (RCS) solid steel shafts shall conform to the general requirements of ASTM A29 and the following descriptions:
    a. High strength low alloy (HSLA), low to medium carbon steel grade (similar to AISI 1530) with improved strength due to fine grain size and structure having a torsional strength rating of 16,000 ft.-lbs (21.7 kN-m)
4. The 2.25 inch (57.2 mm) round cornered square (RCS) solid steel shafts shall conform to the general requirements of ASTM A29 and the following descriptions
    a. High strength low alloy (HSLA), low to medium carbon steel grade (similar to AISI 1530) with improved strength due to fine grain size and structure having a torsional strength rating of 21,000 ft.-lbs (28.4 kN-m).

C. Helices: Carbon steel sheet, strip, or plate formed on matching metal dies to true helical shape and shall conform to the following ASTM specifications:
    1. 5,700 ft.-lbs.(7.46 kN-m)(760 kgf-m) 1.5 inch (38.1 mm) Piers: ASTM A607, A570, or A572 Grade 50 or 80.
    2. 7,000 ft-lbs.(9.49 kN-m)(968 kgf-m) 1.5 inch (38.1 mm) Piers: ASTM A607, A570, or A572 Grade 80.
    3. 11,000 ft.-lbs.(13.6 kN-m)(1,380 kgf-m) 1.75 (44.5 mm) inch Piers: ASTM A715 Grade 80.
    4. 16,000 ft.-lbs.(21.7 kN-m) 2.25 (57.2 mm) inch Piers: ASTM A656 or A1018 Grade 80.
    5. 21,000 ft.-lbs.(28.4 kN-m) 2.25 (57.2 mm) inch Piers: ASTM A656 or A1018 Grade 80.
D. Bolts: The sizes and types of bolts used to connect the Helical Pier® extensions to lead sections or another extension shall conform to the following ASTM specifications:
    1. 1.5 inch (38.1 mm) Helical Piers®: 0.75 inch (19.1 mm) diameter bolt per ASTM A320 Grade L7.
    2. 1.75 inch (44.5 mm) Helical Piers®: 0.875 inch (22.2 mm) diameter bolt per ASTM A193 Grade B7.

E. Couplings: Couplings will be formed as an integral part of (rcs) shaft extension material through an upset forging process. Welded couplings are not allowed.

F. Finish: All material shall have a Class B-1 hot dipped galvanized coating complying with ASTM A153

G. Helical Pier Access Box:

1. TCTSQCV - TurfCool™ Quick Connect Valve Box Synthetic Track Version as manufactured and supplied by:
    a. Sportsfield Specialties, Inc. P.O. Box 231, 41155 State Highway 10, Delhi, NY 13753. 888-975-3343 (www.sportsfieldspecialties.com).
        i. TCTSQCV - TurfCool™ Quick Coupler or Gate Valve Box Track Surfacing
            1. Dimensions: 18” W x 15” L x (length as required – field verify)
        ii. Box: 3/16" (0.1875”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
            1. 1/8" (0.125”) Aluminum Cover Ledge
            2. Leveling Bolts
        iii. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:
            1. ½” (0.50”) Recess Designed to Accept Synthetic Track Surfacing by Others
            2. Secured with Cam Lock
        iv. Assembly Hardware

## PART 3 - WORKMANSHIP

### 3.1 EQUIPMENT

A. Installation Equipment:

1. Shall be a rotary type motor with equal forward and reverse torque capabilities. This equipment shall be capable of continual adjustment of the torque drive unit's revolutions per minute (RPM's) during installation. Percussion drilling equipment will not be allowed.
2. Shall be capable of applying installation torque equal to the torque required to meet the pier loads.
3. Equipment shall be capable of applying axial compression (crowd) pressure and torque simultaneously.

B. Torque Monitoring Devices:

1. The torque being applied by the installing units shall be monitored throughout the installation by the installer. The torque monitoring device shall either be a part of the installing unit or an independent device in-line with the installing unit. Calibration for either unit shall be available for review by the Owner.

3.2 INSTALLATION PROCEDURES:

A. Advancing Sections:

1. Engage and advance the Helical Pier® sections in a smooth, continuous manner with the rate of pier rotation in the range of 5 to 35 RPM.
2. Apply sufficient axial compression (crowd) pressure to uniformly advance the helical sections to approximately 3-inches (76.2 mm) per revolution. The rate of rotation and magnitude of crowd pressure must be adjusted for different soil conditions and depths in order to maintain the penetration rate.
3. If the helical section ceases to advance, refusal will have been reached and the installation shall be terminated.

B. Termination Criteria:

1. The torque as measured during the installation shall not exceed the torsional strength rating of the steel helical lead and extension sections.
2. The minimum depth criteria indicated on the Drawings must be satisfied prior to terminating the steel Helical Pier.
3. The top helix is to be located not less than five (5) feet (1.5 m) below the grade elevation unless otherwise approved by the Owner.
4. If the torsional strength rating of the pier and/or installing unit has been reached prior to satisfying the minimum depth required, the installing contractor shall have the following options:
    a. Terminate the installation at the depth obtained with the approval of the Owner, or,
    b. Remove the existing pier and install a pier with smaller and/or fewer helices. This revised pier shall be terminated deeper than the terminating depth of the original pier as directed by the Owner.
5. In the event the minimum installation torque is not achieved at minimum depth, the Contractor shall install the foundation deeper using additional plain extension sections.
6. The minimum specified installation torque shall have been met when the measured installation torque meets or exceeds the minimum specified installation torque in two successive readings of the measuring device, unless otherwise specified by the Owner.
7. The installer shall keep a written installation record for each Helical Pier®. This record shall include the following information as a minimum:
    a. Project name and location.
    b. Name of authorized and certified dealer and installer.
    c. Name of installers foreman or representative witnessing the installation.
    d. Date of installation.
    e. Location of Helical Pier®.

f. Description of lead section including number and diameter of helices and extensions used.

g. Overall depth of installation from a known reference point.

h. Installation torque at termination of pier.

i. Load transfer device

## PART 4 - MEASUREMENT AND PAYMENT

4.1 Use the following unit price as designated on the Bid Schedule. If required and not listed in the Bid Schedule, the following Bid Items are to be considered incidental to other bid items.

A. Install Festival Tent Anchors w/Helical Piers & Access Box: Per Each. Includes all labor, materials, and equipment to install the helical piers and access boxes as detailed on the plans. No allowance for changes in length relative to that originally bid.

1. Bid Schedule Payment Reference: SP7.4.1.A.1
2. Bid Schedule Description: Install Festival Tent Anchors w/Helical Piers & Access Box…per Each (EA).

END OF SECTION

## SP8 - PRESSURE IRRIGATION

## PART 1 – GENERAL

1.1 SECTION INCLUDES
- A. Pressure irrigation water transmission and distribution pipe and fitting materials, installation, and testing.
- B. Refer to Division 600 for gravity irrigation transmission and distribution pipe and accessories, installation, and testing.

1.2 RELATED SECTIONS
- A. Section 301 – Trench Excavation
- B. Section 304 – Trench Foundation Stabilization
- C. Section 305 – Pipe Bedding
- D. Section 306 – Trench Backfill
- E. Section 401 – Water Pipe and Fittings
- F. Section 405 – Non-Potable Water Line Separation
- G. Section 703 – Cast-in-Place Concrete

1.3 REFERENCES
- A. ANSI/AWWA C 906: Polyethylene Pressure Pipe and Fittings
- B. ASTM D 2241: PVC Pressure-Rated Pipe
- C. ASTM D 2672: Joints for IPS PVC Pipe

1.4 SUMMARY
- A. This Section includes piping, valves, specialties, and wiring for automatic-control irrigation system.
- B. This Section includes piping, valves, and specialties for pressurized water-supply system supplying quick couplers within the extents of the synthetic play field.

1.5 DEFINITIONS
- A. Circuit/Lateral Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure only during flow.
- B. Drain Piping: None
- C. ET Controllers: None
- D. Pressure/Mainline Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.
- E. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50V or for remote-control, signaling power-limited circuits.
- F. Quick Couplers (QC): Supplemental watering station connected directly off mainline piping. May be under continual operation pressure from water distribution system.
- G. Point-of-Connection: Designated location of connection from water source to water distribution system.
- H. Tracer Wire: None
- I. Detectable Warning Tape: Underground warning tape placed above irrigation mainline to identify buried irrigation water lines using a metal detector.

1.6 PERFORMANCE REQUIREMENTS
- A. Irrigation zone control shall be automatic operation with controller and automatic control valves.
- B. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:
    1. Irrigation Mainline Piping: 150 PSIG

2. Lateral Piping: 200 PSIG
3. Electric Valves: 150 PSIG
4. Isolation Valves/Ball Valves: 150 PSIG

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
   1. Automatic Control Valves
   2. Piping/Fittings/Clamps/Solvents
   3. Quick Couplers
   4. Isolation Valves
   5. Backflow Preventor
   6. Valve Boxes
   7. Controllers

B. Wiring Diagrams: For power, signal, and control wiring.

1.8 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.
   1. Provide evidence of the following:
      a. Name of irrigation contractor.
      b. Minimum of (5) five years of irrigation installation experience.
      c. Project name, date completed and overall project budget of a minimum of (3) three similar projects completed withing the last (5) five years.

B. Zoning Chart: Show each irrigation zone and its corresponding control valve.

C. Controller Timing Schedule: Indicate timing settings for each automatic controller zone.

D. Field quality-control reports.

1.9 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For sprinklers, controller(s), quick couplers, and automatic control valves to include in operation and maintenance manuals.

B. As Built / Record Drawings:
   1. Record accurately on one set of reproducible copies of the site plan provided by the landscape architect, all installed work including both pressure and non-pressure lines. Upon completion of each increment of work, transfer all such information and dimensions to the print. The dimensions shall be recorded in a legible manner.
   2. Dimension from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavement, etc.). Locations shown on as-built drawings shall be kept day-to-day as the project progresses in installation. All text size dimensions shall be minimum 1/8-inch height on drawings.
   3. Show locations and depths of the following items:
      a. Point of Connection (P.O.C.)
      b. Routing of mainline/pressure piping and lateral piping (label horizontal and vertical dimensions every 100 LF along routing).
      c. Control Valves
      d. Quick Couplers
      e. Routing of control wires
      f. Other related equipment
   4. Always maintain as-built drawings on-site.
   5. Make all notes on drawings in pencil (no ink pen).

6. Contractor shall preserve a set of approved contract drawings on which is to be placed exact measured dimensions of line runs, tees, valves, sprinkler, gate valve locations, and wire runs. This work must be completed daily. Requests for partial payments will not be honored without proof that these as-built drawings are totally up to date. All buried work shall be located by accurate measurements from at least two permanent structures.
7. Upon substantial completion of the project, the contractor shall submit the drawings to the Engineer for review and approval. Upon approval, the contractor shall prepare a set of as-built reproducible drawings on which all the information is clearly shown with drafting and legibility compared to original drawings. The owner's representative will be the sole judge of the acceptability of the drawings. The receipt and approval of these documents is a prerequisite to final payment.
8. Contractor to provide (2) 11" x 17" color-coded, laminated drawings delineating irrigation zones. These shall be placed next to irrigation controller if controller is located indoors, and inside the controller cover is controller is located outdoors.

1.10 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials matching products installed and that are packaged with protective coverings for storage and identified with labels describing contents.
   1. Quick Couplers: Equal to 10% percent of amount installed for each type and size indicated, but no fewer than (1) one unit.
   2. Quick Coupler Keys: Equal to (1) one key per installed quick coupler for each type and size indicated, but no fewer than (5) units.

1.11 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers with a minimum of (5) five years of installation experience and a minimum of (3) three demonstrated projects of similar scope, budget, and complexity.
B. Electrical components, Devices and Accessories: Listed and labeled as defined in NFPA 70 by a qualified testing agency and marked for intended location and application.
C. Backflow prevention assemblies and installation: Comply with requirements of City of Sandpoint and State of Idaho.
D. Electrical installations: Comply with "National Electric Code" and requirements of University for connections between wiring and electrically operated devices.

1.12 DELIVERY, STORAGE, AND HANDLING

A. It is the responsibility of the contractor to ensure the serviceability of all materials and products used or installed during the execution of contract. Any materials rendered unserviceable due to neglect in handling, storage, or transportation will be replaced at no cost to the university.
B. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
C. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.13 PROJECT CONDITIONS

A. It is the responsibility of the irrigation contractor to conduct the following surveys to gather informational data prior to construction.

1. Surveying: Perform site survey, research public utility records and verify utility locations prior to commencement of work.
2. Logistical Information: Investigate and determine available water supply, minimum pressure, location and size of Point of Connection and available flow.
3. Site Conditions: Investigate topography, soil conditions and existing plantings as may affect project execution.

1.14 SEQUENCING AND SCHEDULING:

A. Construction Inspections: During the construction of the project an owner's representative shall make daily inspections of the project to take digital photos of all trenching, piping, and head placement PRIOR to any backfilling. This will also allow the contractor to discuss any minor concerns or issues regarding the layout of the system

B. Post-Construction Meeting: Upon completion of project, a meeting will be scheduled between contractor and owner's representatives to discuss acceptance, generate a punch list, and demonstrate operation of the project.

## PART 2 – MATERIALS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified:
1. Hunter Irrigation
2. Rain Bird Irrigation

2.2 PIPES, TUBES, AND FITTINGS

A. Comply with requirements in the piping schedule for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.

B. PVC Pipe: ASTM D1784, PVC 1120 compound, Type 1 Grade 1, Cell Class of 12454B. Schedule 40 PVC.
1. All mainline pipe used to install irrigation systems on project shall be PVC (polyvinyl chloride plastic) Pipe and shall meet current minimum ASTM standards that apply to seamless PVC pressure rated piping. All piping installed in trenches shall not be stacked upon each other. There shall be a minimum of 4" horizontal separation between the pipes within the same trench. No other pipe material will be accepted unless specified by the landscape architect drawing or approved by designated representative.
a. PVC Socket Fittings: ASTM D2672, Schedules 40.
b. PVC Threaded Fittings: ASTM D2464, Schedule 80.
c. PVC Socket Unions: Schedule 80.
2. Mainlines/Pressure Piping: Schedule 40 PVC Pipe. Installations up to (4") inches may use welds. Installations over (4") inches will use gasket connections or solvent welds when approved. All solvent welds will use a heavy bodied solvent and purple primer.
3. Laterals/Circuit Piping: Schedule 40 PVC Pipe per plans. All solvent welds will use a heavy bodied solvent and purple primer.

2.3 PIPING JOINING MATERIALS

A. Solvent Cements for Joining PVC Piping: ASTM D2564. Include primer according to ASTM F656.

2.4 SLEEVING

A. PVC Pipe, Pressure Rated: ASTM D2241, PVC 1120 compound, Class 200 SDR 21
    1. All transitions of piping under hardscape including concrete, asphalt or other materials used for walkways, patios, common areas or roads shall be encased in Class 200 PVC sleeves. Sleeves shall be a minimum of (4”) inches or 2x times the diameter of the encased pipe, whichever is greater.
    2. Each end shall be sealed with duct tape to prevent dirt and debris from sloughing into the body of the sleeve.
    3. Sleeves will extend to a minimum of (18”) inches past hardscape edges being traversed and will have a depth of not less than (36”) inches below grade and no greater than (36”) inches.
    4. Sleeves shall be located per drawings.
    5. Only one irrigation pipe (i.e. mainline or lateral line) is allowed per sleeve.
    6. Control wires shall be placed in their own sleeve (2” min) when not following the mainline.

2.5 ISOLATION VALVES

A. All isolation valves shall be brass bodied gate valves of the same size as the attached mainline or larger manufactured by the following:
    1. Nibco
    2. Milwaukee
    3. McDonald
    4. Approved Equal
B. Valves shall be located as indicated on Drawings.

2.6 AUTOMATIC CONTROL VALVES

A. Description: Molded-Plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24V AC solenoid.
    1. All electric control valves shall be Rain Bird PEB or Hunter ICV type valves.
        a. Size and locations as indicated on Drawings.

2.7 QUICK COUPLERS

A. Description: Factory-fabricated, brass, two-piece assembly, rubber-covered cap, and operating key.
    1. All quick couplers shall be Rain Bird 44-RC.
        a. Locations as indicated on Drawings.

2.8 BACKFLOW PREVENTER

A. Description: Factory-fabricated Reduced Pressure Principle Assembly with full port quarter turn ball valves.
    1. Backflow Preventer shall be ASSE Listed 1013, rated to 108°F degrees Fahrenheit, and supplied with full port ball valves. The main body and access covers shall be bronze (ASTM B 584), the seat ring and all internal polymers shall be NSF Listed Noryl™ and the seat disc elastomers shall be silicone. The first and second checks shall be accessible for maintenance without removing the relief valve or the entire device from the

line. If installed indoors, the installation shall be supplied with an air gap adapter and integral monitor switch.

a. Reduced Pressure Principle Backflow Preventer shall be a Zurn Wilkins Model# 975XL
b. Size shall be (2-inch).
c. Manufactured by Zurn Industries, LLC.
d. Locations as indicated on Drawings.

2. Backflow Preventer Security Cage:
   a. Cages shall be “Gorilla Cages” manufactured by Houston Irrigation Services, (281) 705-9701 (www.GorillaCages.com).
      i. Size shall be confirmed by Contractor (submit cage size to Architect for approval).
      ii. Cage shall be powder coated.
      iii. Color shall be Dark Green (submit color sample to Architect for approval).

2.9 VALVE BOXES

A. Boxes in Natural Landscape Conditions:
   1. All irrigation boxes as manufactured by Carson or approved equal.
   2. Description: Box and cover, with open bottom and openings for piping; designed for installing flush with grade.
      a. Size: 14” x 19”
      b. Shape: Rectangular
      c. Sidewall Material: HDPE, Flared
      d. Cover Material: HDPE
         i. Lettering: “IRRIGATION VALVE BOX”
         ii. Color shall be green
      e. Extensions: As required, 14” x 19” x 6”

B. Boxes in Synthetic Turf Conditions:
   1. TCITQCV - TurfCool™ Quick Coupler or Gate Valve Box for synthetic infill turf as manufactured and supplied by:
   2. Sportsfield Specialties, Inc. P.O. Box 231, 41155 State Highway 10, Delhi, NY 13753. 888-975-3343 (www.sportsfieldspecialties.com).
      a. TCITQCV - TurfCool® Quick Coupler or Gate Valve Box for Synthetic Infill Turf
         i. Dimensions: 18” W x 15”L x (length as required – field verify)
      b. Box: 3/16" (0.1875”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
         i. 1/8" (0.125”) Aluminum Cover Ledge
         ii. Integrated Synthetic Infill Turf Attachment Ledge
         iii. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
         iv. 2” O.D. Pipe Clamps and Mounting Brackets
         v. 1” PVC Drain Stub for Positive Drainage Connection
         vi. Leveling Bolts
      c. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:

i. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
ii. Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others

d. Assembly Hardware

C. Drainage Backfill: Clean, crushed aggregate, graded from 5/8” minimum to 3/4” maximum.

2.10 AUTOMATIC CONTROL SYSTEM

A. Description: Battery-operated controller.
1. As manufactured by Rain Bird:
a. Controller shall be Rain Bird ESP-9V.

B. Wiring: UL 493, Type UF multiconductor, with solid-copper conductors; insulated cable; suitable for direct burial.
1. Low-Voltage, Branch-Circuit Cables: No. 14 AWG minimum, between controllers and automatic control valves; color-coded different from feeder-circuit-cable jacket color; with jackets of different colors for multiple-cable installation in same trench.
2. Splicing Materials: Manufacturer's packaged kit consisting of insulating, spring-type connector or crimped joint and epoxy resin moisture seal; suitable for direct burial.

## PART 3 – WORKMANSHIP

3.1 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Section 202 “Excavation and Embankment”, Section 301 “Trench Excavation”, Section 305 “Pipe Bedding”, and Section 306 “Trench Backfill”.

B. Provide minimum cover over top of underground piping according to the following:
1. Irrigation Mainline Piping: 36-inches (762 mm) below finished grade.
2. Circuit/Lateral Piping: 36-inches (762 mm) below finished grade.
3. Sleeves: 36-inches (762 mm) below finished grade.

3.2 PREPARATION

A. Set stakes to identify locations of proposed irrigation system.

3.3 PIPING INSTALLATION

A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved by Architect.

B. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.

C. Install piping free of sags and bends.

D. Install groups of pipes parallel to each other, spaced to permit valve servicing (minimum 4-inches in all directions).

E. Install fittings for changes in direction and branch connections.

F. Install unions adjacent to valves and to final connections to other components with NPS 2 (DN 50) or smaller pipe connection.

G. Install underground thermoplastic piping according to ASTM D2774 [and ASTM F690].

H. Lay piping on solid subbase, uniformly sloped without humps or depressions.

I. Install PVC piping in dry weather when temperature is above 40 deg F (5 deg C). Allow joints to cure at least 24 hours at temperatures above 40 deg F (5 deg C) before testing.
J. Install piping in sleeves under parking lots, roadways, and sidewalks.
K. Install sleeves per products Section 2.4, PVC pipe and socket fittings, and solvent-cemented joints.
L. Install transition fittings for plastic-to-metal pipe connections according to the following:
    1. Underground Piping:
        a. NPS 1-1/2 (DN 40) and Smaller: Plastic-to-metal transition fittings.
        b. NPS 2 (DN 50) and Larger: AWWA transition couplings.
    2. Aboveground Piping:
        a. NPS 2 (DN 50) and Smaller: Plastic-to-metal transition [fittings] [unions].
M. Install dielectric fittings for dissimilar-metal pipe connections according to the following:
    1. Underground Piping:
        a. NPS 2 (DN 50) and Smaller: Dielectric coupling or dielectric nipple.
    2. Aboveground Piping:
        a. NPS 2 (DN 50) and Smaller: Dielectric union.

3.4 JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
    1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
    2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
D. PE Piping Fastener Joints: Join with insert fittings and bands or fasteners according to piping manufacturer's written instructions.
E. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
    1. Comply with ASTM F402 for safe-handling practice of cleaners, primers, and solvent cements.
    2. PVC Pressure Piping: Join schedule number, ASTM D1785, PVC pipe and PVC socket fittings according to ASTM D2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D2855.
    3. PVC Non-pressure Piping: Join according to ASTM D2855.

3.5 VALVE INSTALLATION

A. Underground Gate Valves: Install in valve boxes defined in Section 2.9.
B. Underground Automatic Control Valves: Install in valve boxes defined in Section 2.9.

3.6 SPRINKLER INSTALLATION

A. None

3.7 DRIP IRRIGATION SPECIALTY INSTALLATION

A. None

3.8 AUTOMATIC IRRIGATION-CONTROL SYSTEM INSTALLATION

A. Equipment Mounting: Install battery-operated controller(s) inside automatic control valve box adjacent to control valve.

B. Install control cable in same trench as irrigation piping and at least 2 inches (51 mm) beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate Schedule 40 Grey Conduit sleeve under paved areas (minimum pipe size 2-inch).

3.9 CONNECTION

A. Comply with requirements for piping specified in Section 221113 "Facility Water Distribution Piping" for water supply from exterior water service piping, water meters, protective enclosures, and backflow preventers. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment, valves, and devices to allow service and maintenance.

C. Connect wiring between controllers and automatic control valves.

3.10 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Tests and Inspections:

1. Pressure Test: After installation, fully charge system with water and test for leaks. Repair leaks and retest until no leaks exist.
    a. Testing shall consist of the following:
        i. Testing of mainline shall be performed when all connections and valves are in place.
            A. Mainline Pressure shall be brought to static pressure of 100 PSI for 1-hour with not more than 3 PSI loss within the 1-hour time period.
2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Any irrigation product will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

3.11 STARTUP SERVICE

A. Perform startup service.

1. Complete installation and startup check according to manufacturer’s written instructions.

2. Verify that controllers are installed and connected according to the Contract Documents.
3. Verify that electrical wiring installation complies with manufacturer's submittal.

3.12 ADJUSTING

A. Adjust settings of controllers.
B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.
C. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with finish grade.

3.13 CLEANING

A. Flush dirt and debris from piping before installing sprinklers and other devices.

3.14 DEMONSTRATION

A. Irrigation Contractor shall train Owner's maintenance personnel to adjust, operate, and maintain automatic control valves and controllers.

PART 4 – MEASUREMENT AND PAYMENT

4.1 SECTION INCLUDES

A. Install (2-Inch) Irrigation System Point-of-Connection (P.O.C.) - Includes all labor, materials, and equipment to install backflow preventer, gate valve, and quick coupler per plans. Connect into existing (2-Inch) water meter. Includes layout, trenching, pipe, fittings, connections, testing, boxes, security cages, vaults, slabs, backfill, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per lump sum.
    1. Bid Schedule Payment Reference: SP8.4.1.A
    2. Bid Schedule Description: Install (2-Inch) Irrigation System Point-of-Connection (P.O.C.)

4.2 SECTION INCLUDES

A. Install (2-Inch) Irrigation Mainline - Includes all labor, materials, and equipment to install pressurized irrigation mainline. Includes layout, trenching, pipe, fittings, connections, testing, backfill, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP8.4.2.A
    2. Bid Schedule Description: Install (2-Inch) Irrigation Mainline

4.3 SECTION INLUDES

A. Install (6-Inch) PVC Irrigation Sleeve - Includes all labor, materials, and equipment to install PVC Irrigation Sleeve. Includes layout, trenching, pipe, fittings, connections, testing, backfill, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per linear foot.
    1. Bid Schedule Payment Reference: SP8.4.3.A
    2. Bid Schedule Description: Install (6-Inch) PVC Irrigation Sleeve

4.4 SECTION INCLUDES

A. Install Quick Coupler w/ Turf Box - Includes all labor, materials, and equipment to install quick coupler and turf box. Includes survey, layout, excavation, box setting, pipe, fittings, connections, testing, and all other required incidentals to

install completely per plans, details, and specifications. Pay item shall be per each.

1. Bid Schedule Payment Reference: SP8.4.4.A
2. Bid Schedule Description: Install Quick Coupler w/ Turf Box

4.5 SECTION INCLUDES

A. Install Isolation Valve w/ Turf Box – Includes all labor, materials, and equipment to install isolation valve and turf box. Includes survey, layout, excavation, box setting, pipe, fittings, connections, testing, PVC valve access extension pipe, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.

1. Bid Schedule Payment Reference: SP8.4.5.A
2. Bid Schedule Description: Install Isolation Valve w/ Turf Box

4.6 SECTION INCLUDES

A. Re-Connect Existing Irrigation Circuit Piping – Includes all labor, materials, and equipment to re-connect existing irrigation lateral zone piping along the North East corner of the site to new water source. Includes all scope from newly installed PVC tee after point-of-connection, battery-operated controller and automatic control valve, valve box, PVC circuit piping, vertical PVC sleeves through cement treated base (CTB), and transition fittings from new PVC laterals to existing polyethylene pipe. Includes layout, trenching, pipe, fittings, connections, testing, backfill, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per lump sum.

1. Bid Schedule Payment Reference: SP8.4.6.A
2. Bid Schedule Description: Re-Connect Existing Irrigation Circuit Piping

**END OF SECTION**

## SP9 - COMMON WORK RESULTS

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUMMARY

A. The work under this division includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of all electrical work for this project as shown on the Electrical Drawings specified herein.

B. Related Work Described Elsewhere: Where other divisions require electrical materials or installations comply with all applicable requirements herein. Provide all electrical materials and installation work required to connect, test and operate equipment required by other divisions. Electrical installations required by other divisions but not shown on the electrical drawings shall be provided.

C. Warranty: The Contractor shall guarantee all work installed under this specification and make good, repair or replace at his own expense, any defective work, materials or parts.

1.3 REGULATIONS

A. Codes and Ordinances: Comply with all applicable codes, ordinances and regulations including the National Electrical Code, the Idaho Administrative Code, National Electrical Safety Code, WISHA, NFPA, and all other national, state and local codes and ordinances. Notify the Engineer of any non-compliance in contract documents to applicable codes and regulations prior to installation of the work. Changes in the work after initial installation due to requirements of code enforcing agencies shall be at no additional cost to the Owner.

B. Permits: Provide and pay for all permits and fees required for this project. In addition to paying for all permits and fees, the Contractor shall be responsible for contacting the various Approving Authorities, arranging for review of shop drawings where appropriate, scheduling inspections in a timely manner, and making necessary corrections as required by the Approving Authorities.

C. Approving Authority: It is the Contractor's responsibility to ascertain and contact the

appropriate "Approving Authorities" for this project. Approving Authorities will include, but not be limited to the electrical inspector and the Fire Marshal having jurisdiction.

D. Certificate of Inspection: Obtain a Certificate of Electrical Inspection from the local inspecting authority indicating final acceptance.

E. Safety Measures to be Taken: The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform his work. The Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Engineer to conduct construction observations of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

1.4 DRAWINGS AND SPECIFICATIONS

A. Intent: The Electrical Drawings and specifications are intended to include all labor and materials necessary to provide a complete and operating facility. Any materials shown and called for on the drawings but not mentioned in the specifications, or vice versa, which are necessary for the proper completion of the installation or operation of the equipment, shall be furnished the same as if specifically called for in both. By submitting a bid, the Contractor is acknowledging that he has made a thorough examination of the contract documents, existing site conditions, and has determined that these documents and conditions do sufficiently describe the scope of construction work required under this contract. Any questions regarding interpretation of the contract documents shall be made in writing in a timely manner prior to the bid date to allow reasonable time for resolution of the questions.

B. Diagrammatic Drawings: The Electrical Drawings are diagrammatic and do not show exact or complete raceway and wiring configurations, routing, rating or the necessary number and types of raceway fittings or pull boxes. Provide all labor and materials required to execute the work.

1.5 SUBMITTALS AND SHOP DRAWINGS

A. It is the Contractor's responsibility to thoroughly review vendor-assembled shop drawings, catalog cuts, etc. to ensure that these documents are complete and comply with the specifications.

B. All submittals and shop drawings must be stamped by the Electrical Contractor and the General Contractor confirming that they have been reviewed

and comply with the contract documents. Submittals that are not stamped will be returned without being reviewed.

C. Submittal Format:

1. General: The submittals must include all specified material. Multiple submittals will not be accepted.
2. Submittals: Electronic submittals are acceptable, however, bound copies of the distribution equipment (switchboards, transformers, distribution panels and panels) and lighting must be provided.
3. Shop Drawings: Only one hard copy shall be provided for review. One electronic (PDF) copy will be returned.

D. Review: The review of a manufacturer's name or product does not relieve the Contractor of the responsibility for providing materials and equipment which comply in all details with the requirements of the contract documents. Contractor shall be solely responsible for submitting materials at such a time to allow a minimum of two weeks for Engineer's review.

1.6 OPERATIONS AND MAINTENANCE MANUALS

A. Prepare operations and maintenance manuals for all equipment installed on this project.

B. Provide table of contents at front of manual indicating general content of each section.
Provide index for each section of the manual with complete equipment catalog item or
identification.

C. The information and diagrams included must be on the specific equipment installed for this project. General "product line" information is not acceptable. The equipment model and catalog numbers with appropriate prefixes and suffixes must be clearly indicated on the data sheets. Manuals shall contain shop drawings, schematic and wiring diagrams (showing all external connections), parts lists, operating and maintenance information. Any modifications to equipment in the field shall be updated on the drawings, diagrams, etc., to reflect the "as-built" conditions.

D. Bind with three-screw post-type binder with heavy-duty hardboard cover and cloth backing. Imprint the edge of volume with name of the project, year of completion and the words "Electrical Equipment." Front of manual shall be imprinted with the words "Electrical Equipment" the name of the project, the name of the Owner, year completed, name of the Architect, Engineer and Contractor. All printing in gold lettering. If the thickness of the manual exceeds approximately two inches, provide separate volumes, each approximately two inches thick with each volume imprinted as described above and with the addition of the volume number.

E. One preliminary copy shall be submitted to the Engineer for review 30 days prior to completion of the project. Preliminary copy shall include proposed wording for cover and back edge of the manual. Submit final bound copies for distribution as required in Division 01.

1.7 RECORD DRAWINGS

A. A record shall be made during the progress of the project indicating the work as actually installed. Corrections and changes shall be kept up to date at all times on a separate set of record drawings kept at the job site for review. Mark-ups may be schematic as related to interior raceway systems; however, all raceways shall be shown in proper relationship with junction boxes, panelboards, devices and equipment. Raceways installed below grade shall be shown with both horizontal and vertical dimensions with an accuracy of ± six inches.

B. Project Closeout: At completion of the project, the Contractor shall provide as-built drawings indicating work as revised, detailed and actually installed.

1.8 DEFINITIONS

A. Telecommunications Room: MER/ER (MDF) or TR/TC (IDF)

B. Provide: To furnish and install.

C. Wiring: Raceway, conductors and connections.

D. Exposed: Visible from occupied areas.

E. Install: To set in position and make fully operational.

F. Furnish: Purchase and deliver to the job site.

G. Required: As required by code, Authority Having Jurisdiction or contract documents for the system and/or installation to be fully operational.

1.9 COORDINATION

A. UTILITIES SERVICES

1. Scope: It shall be the Contractor's responsibility to contact all utility companies, including but not limited to the power company, Telephone Company and cable television company, to verify the extent of the work to be performed by the utility companies. All other labor and materials, necessary, but not provided by the utility companies, shall be provided by the Contractor.
2. Coordination and scheduling of new services with the various utility companies is the sole responsibility of the Contractor.
3. In general, the Contractor shall be responsible for providing the following:
    a. Trenching, backfill and compaction.

b. Raceways.
c. Manholes and vaults (including grounding).
d. Concrete encasement of raceways (where called out on the drawings or specified).
e. Obtaining all necessary permits.
f. Service Charges: All utility service charges will be paid by the Owner.
g. Application for Services: It shall be the Contractor's responsibility to complete and submit all required applications for service with the various utility companies.
h. Right-of-Way Improvements:
    1) It shall be the Contractor's responsibility to contact all utility companies, including, but not limited to, the power company, telephone company and cable television company, to verify the extent of work to be performed by the utility companies. All other labor and materials necessary, but not provided by the utility companies, shall be provided by the Contractor.
    2) Coordination and scheduling with the various utility companies is the sole responsibility of the Contractor.
i. In general, the Contract shall be responsible for providing the following:
    1) Trenching, backfill and compaction.
    2) Raceways.
    3) Manholes and vaults (including grounding).
    4) Concrete encasement of raceways (where called out on the drawings or specified).
    5) Obtaining all necessary permits.
    6) Service Charges: All utility service charges shall be paid by the Owner.
j. Work of Other Trades: The Electrical Drawings do not show complete details of the building construction. Refer to the Structural, Civil, and Landscape, Drawings for those details which may affect the execution of this work. Specific locations of construction features shall be obtained from the reference drawings, field measurements, or the trade providing the material or equipment. No extra payments will be allowed for failure to obtain this information.
k. The Contractor will not be paid for work requiring reinstallation due to lack of coordination prior to installation such as removing and replacing, relocating, cutting, patching or finishing. Special attention is

called to the following items and all conflicts shall be coordinated prior to installation:

l. Light switches will be located on the "strike" side of the door.
m. All electrical outlets, lighting fixtures and other electrical outlets and equipment are installed to avoid conflict with grilles, pipes, sprinkler heads, ducts and other mechanical equipment.
n. Electrical outlets, lighting fixtures and equipment are to be installed in proper relation to cabinets, counters, doors and other Architectural appurtenances.
o. Electrical characteristics (HP, KVA, voltage, phase, fusing, overload protection) of actual equipment furnished under other divisions being different from that shown on the electrical drawings.
p. Provide access panels for electrical items that are behind finished surfaces or otherwise concealed. Access doors and panels are specified in Division 08, Section 083113, "Access Doors and Frames."
q. Provide all required firestopping for electrical work. Firestopping is specified in Division 07, Section 078413, "Penetration Firestopping."

## PART 2 – PRODUCTS

2.1 STANDARD OF QUALITY

A. General: Whenever any material or equipment is specified by patent or proprietary name or by the name of the manufacturer, such specification shall establish the minimum standard of quality in that particular field of manufacture. The engineer shall be the sole and final judge as to quality and acceptability of substitutions, no exceptions.

2.2 PRODUCT LISTING AND LABELING

A. All electrical equipment shall be Underwriters Laboratories listed and labeled. Equipment in compliance with UL standards but not bearing their label is not acceptable. If the manufacturer cannot arrange for labeling of an assembled unit at the factory, the necessary inspection and acceptance by the testing facility shall be performed in the field at no additional cost to the Owner and be acceptable to the Authority Having Jurisdiction.

## PART 3 – EXECUTION

3.1 GENERAL

A. All materials shall be new, free from defects and arrive at the job site in their original
unopened containers.

B. Comply with NECA 1. Where conflict exists between NECA 1 and the contract documents
the most restrictive/expense shall govern.

3.2 MATERIAL STORAGE

A. Make all necessary provisions for storing materials and equipment at site so as to ensure the quality and fitness of the items to be incorporated in the work. Equipment shall be stored to prevent damage and corrosion.

3.3 INTERRUPTION OF EXISTING ELECTRICAL SERVICE

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities
occupied by Owner or others unless permitted under the following conditions and then only
after arranging to provide temporary electrical services.

B. Notify the Owner no fewer than 48 hours in advance of proposed interruption of electrical
service.

C. Do not proceed with interruption of electrical service without the Owner's written permission.

3.4 EXISTING CONDITIONS

A. General: Specific scope of demolition work and operating conditions to be encountered shall be verified by on-site review prior to submitting bid. Demolition work in general is noted or shown on the documents based upon available "drawings of record" and may not show the actual conditions as they presently exist. The Contractor shall be responsible for removing or modifying the existing electrical installation as required by the building alterations. The Contractor shall be responsible for protection of existing equipment and wiring to be retained or reinstalled and shall replace any equipment damaged during the process of removal and reinstallation.

B. Owner-Retained Equipment: The Owner may wish to retain certain specific items scheduled
for demolition. The Contractor shall carefully remove these items, provide protection and
packaging as may be required to protect the equipment and turnover said equipment to the
Owner at a place designated on the jobsite. Any equipment that the Owner does not desire
to retain shall become the property of the Contractor and be removed from the site. The
following equipment shall be salvaged to the Owner:

1. Fire alarm control panels
2. Communication system and equipment racks
3. Security system control panels
4. Access system control panels
5. CCTV cameras and headend equipment
6. Public address system speakers and equipment

7. Equipment noted on the drawings

C. Existing Raceways and Wiring:

1. No existing raceways or wiring shall be reused unless specifically shown on the drawings.
2. Unused Raceways and Wiring: All unused conductors in existing buildings shall be removed. All unused raceway shall be removed except where located in or above existing construction which is not being altered and would require removal and replacement of the existing construction.
3. Continuity of Service To and In Existing Building: The Contractor shall reroute existing raceways, wiring and equipment which is in conflict with building alterations. The Contractor's bid shall include intercepting and relocating existing raceways in 10 different locations throughout the project. These locations are in addition to those shown on the drawings. Each location shall be assumed to have four 3/4" EMT raceways that are each 100 lineal feet in length and each containing seven #12 AWG conductors which must be intercepted and relocated.
4. Ceiling Panels: Remove and reinstall all necessary panels in existing accessible ceilings, as required for the installation of electrical work. Where existing ceiling panels are damaged, they shall be replaced with new units. After ceiling removal and reinstallation is complete, the ceiling system appearance shall match adjacent similar ceilings that have not been removed.
5. Work Caused by Removal and Reinstallation of Existing Material: Existing electrical work which is to be removed and reinstalled as a result of the installation of work by other trades shall be performed by the Electrical Contractor at no additional expense to the Owner.
6. Existing fluorescent lamps and ballasts to be removed shall be assumed to contain PCBs/Mercury and are to be treated as hazardous materials. Removal and disposal of these fixtures are to comply with all local, state and federal agency requirements. Provide documentation as required by all regulating agencies as proof of proper disposal.
7. Openings in walls, floors and ceilings resulting from removal of conduits and/or devices are to be patched with materials equivalent to adjacent surfaces. Materials used for patching shall maintain the fire rating of the existing area.

## 3.5 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

A. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.

## 3.6 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. General:

1. Provide sleeves for all penetrations unless core-drilled holes or formed openings are used.
2. Extend sleeves installed in floors two inches above finished floor level.
3. Size sleeves to provide 1/4-inch annular clear space between sleeve and raceway, unless indicated otherwise.
4. Seal space outside of sleeves with grout for penetrations of concrete and masonry. Pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
5. Interior Penetrations of Non-Fire-Rated Walls and Floors: Provide EMT sleeves. Seal space between sleeve and wall or floor using joint sealant appropriate for size, depth and location of joint. Comply with requirements in Division 07, Section 079200, "Joint Sealants."
6. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Comply with requirements in Division 07, Section 078413, "Penetration Firestopping.
    a. Penetrations at Walls, Partitions and Ceilings. Provide STI "EZ-Path" assemblies.
    b. Penetration at Floors. Provide EMT sleeves. Seal pathway and cable penetration with firestop materials. "
7. Roof-Penetration Sleeves: Provide a four-pound lead-plumbing vent flashing. Provide counter flashing attached above with a stainless-steel draw band clamp.
8. Aboveground, Exterior-Wall Penetrations: Provide steel pipe sleeves. Select sleeve size to allow for one-inch annular clear space between pipe and raceway. Seal penetration utilizing mechanical sleeve seals.
9. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for one-inch annular clear space between pipe and raceway. Seal penetration utilizing mechanical sleeve seals.

## 3.7 FIRESTOPPING

A. Provide firestopping to penetrations of fire-rated floor, wall and ceiling assemblies for electrical installations to restore original fire-resistance rating of the assembly. Firestopping materials and installation requirements are specified in Division 07, Section 078413, "Penetration Firestopping."

## 3.8 CUTTING AND PATCHING

A. Provide all required cutting, demolition and patching required for the installation of the electrical work. Penetrations

through structural walls, ceiling or floor slabs shall be core drilled. In no case shall structural members be penetrated without prior approval of the structural engineer.

3.9 PAINTING

A. Touch up electrical equipment with factory finished surfaces as required using factory furnished paint. Do not paint screw heads, hinges, nameplates, hardware, etc. All surface-mounted raceways in finished areas shall be painted to match adjacent surfaces.

3.10 CLEANING

A. Promptly remove waste material and rubbish resulting from electrical work.

B. Prior to energizing equipment, remove all dirt and debris. Vacuum and wipe-down all surfaces.

C. Clean all equipment and fixtures at completion of the project.

3.11 CONSTRUCTION OBSERVATION AND FINAL ACCEPTANCE

A. Site Review: On-site meetings or reviews of construction by the Engineer shall not be construed as acceptance by these parties as related to quantities, rough-in locations, and compliance with code enforcing authorities.

B. Testing: The Contractor shall test all wiring and all electrical equipment to verify absence of grounds and short circuits and verify proper operation, rotation and phase relationship. Contractor will be responsible for scheduling of tests and demonstrations at times mutually acceptable to the Owner. All equipment shall be demonstrated to operate in accordance with the requirements of this specification and the manufacturer's recommendations. Operate every device manually and automatically in accordance with its purpose. Tests shall be performed in the presence of the Owner or his designated representative. All instruments and personnel required to conduct the test shall be provided by the Contractor. Any test not witnessed by the Owner shall be waived by written document. All such documents must become the property of the Owner upon completion of construction.

3.12 INSTRUCTION FOR OWNER'S PERSONNEL

A. Scope: Following initial operation of all electrical equipment and prior to acceptance of the electrical work, conduct demonstrations of equipment operation and instruction periods for the Owner's representatives.

B. Instruction Periods: Shall include preliminary discussion and presentation of information from maintenance manuals with appropriate references to drawings, followed by tours of equipment spaces explaining maintenance requirements,

access methods, servicing and
maintenance procedures, settings and available system and equipment adjustments.

C. Contractor's representatives, in general, who conduct these instructions and demonstrations shall be qualified foremen or superintendents acquainted with this project and from the trade involved. For major equipment, lighting control systems and all low-voltage systems, the representative shall be the manufacturer's representatives with operating experience and substantial design experience on this project. Their qualifications shall be submitted to the Architect and Engineer before conducting the instruction period.

D. Minimum Duration of Instruction Periods:

1. Electrical Distribution System: Four hours.
2. Communications, Safety and Security Systems: Four hours each unless noted
   otherwise.
3. Refer to other sections of the specification for additional testing requirements.

E. Scheduling of Instruction Periods: Provide notice of Contractor's readiness to conduct such instruction and demonstration periods to the Owner at least two weeks prior to each
instruction period and reach agreement on the date of each instruction period.

F. Prepare a written statement of acceptance for the Owner's signature. The statement shall be substantially as follows:

"I (the Contractor), the associated factory representatives and the subcontractor, have thoroughly tested each of the following systems and have proved their normal operation to the Owner's representative and have instructed him in the operation and maintenance thereof."

| Owner's System | Demonstrator Representative | Date |
|---|---|---|
| 1. Electrical Distribution & Lighting | _____ | |
| 2. Communications Systems | _____ | |
| 3. Safety and Security Systems | _____ | |

Owner's Representative Date

Electrical Contractor Date

G. Send copies of this acceptance to the Architect and the Engineer and place one copy in each maintenance manual.

H. Completion of Work: When requesting final inspection, provide ten-day notice. Submit written certifications that the work has been fully completed in strict accordance with the plans and specifications.

## PART 4 – MEASUREMENT AND PAYMENT

a. 4.1 Common Work Results shall be considered incidental to other items.

## SP10 - LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of product provided.

### PART 2 – PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. American Insulated Wire
2. General Cable
3. Southwire

B. Conductors: Stranded copper, or aluminum for feeders.
C. Conductor Insulation: Type THHN-THWN.

2.2 FIRE-RATED CABLE

A. NFPA 70, Type MI (mineral insulated) with copper or aluminum conductors, copper sheath, two-hour fire-resistive rating, UL listed.

2.3 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. O-Z/Gedney
2. 3M
3. Tyco

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

### PART 3 – EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Stranded Copper or Aluminum.
B. Branch Circuits: Stranded Copper or #12 Solid Copper.

3.2 CONDUCTOR INSULATION AND WIRING METHODS

A. Service Entrance: Type THHN-THWN, single conductors in raceway.
B. Feeders: Type THHN-THWN, single conductors in raceway.
C. Branch Circuits:

1. Type THHN-THWN, single conductors in raceway.

2. Provide dedicated neutral conductor for all branch circuits.
3. MC Cable serving recessed outlets from device to homerun j-box.

D. Fire Pump Power and Control Wiring Installed within Building: Two-hour fire-rated cable.

E. Minimum Conductor Size:

1. Neutral: #10 AWG (#12 AWG minimum for dedicated neutrals and lighting circuits).
2. Ground: #12 AWG.
3. Phase Conductors (more than six in a raceway): #10 AWG.
4. Phase Conductors (six or less in a raceway): #12 AWG.
5. Branch Circuit Homeruns (longer than 75 feet): #10 AWG.

F. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, and strain relief device at terminations to suit application.

G. Class 1 Control Circuits: Type THHN-THWN, in raceway.

H. Class 2 Control Circuits: Type THHN-THWN, in raceway.

## 3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

B. Wiring from separate systems shall not be intermixed in a common junction box.

C. Wiring shown in separate raceways shall not be combined.

D. Feeders: Make no splices unless shown on the plans.

E. Branch Circuits: Homeruns longer than 75 feet to the first outlet shall be #10 AWG minimum for the entire length of the circuit. Make no splices in homeruns.

## 3.4 CONNECTIONS

A. General: Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Feeder Splices: Make splices with hydraulically set long barrel connections insulated with heat shrink tubing.

C. Lighting and Receptacle Branch Circuit Splices: Insulated screw-on type connectors.

D. Wiring at Outlets: Install conductor at each outlet with at least six inches of slack.

E. Below-Grade Splices: Make splices in handholes and insulate with epoxy resin-type splicing kits. 3M or equal.

F. Termination at Busses (Panel, Switchboard, Transformers, ATS, etc.): Hydraulically-set compression lugs.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Low Voltage Electrical Power Conductors and Cables are incidental to other items.

## SP11 - GROUNDING AND BONDING

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of product provided.

### PART 2 – PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Stranded copper wire or cable insulated for 600 volts.

B. Bare Copper Conductors: Stranded copper wire or cable.

C. Grounding Bus: Rectangular bars of annealed copper, 1/4 by 2 by 12 inches in cross section with one inch (minimum) insulated spacers, unless otherwise indicated, with insulators.

2.2 CONNECTORS

A. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.

B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad, 3/4 inch by 10 feet.

### PART 3 – EXECUTION

3.1 APPLICATIONS

A. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum.

B. Bury at least 24 inches below grade.

C. Duct-Bank Grounding Conductor: Bury 12 inches above duct bank when indicated as part of duct-bank installation.

D. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.

E. Grounding Bus: Install in electrical rooms, telecommunications equipment rooms, in rooms housing transformers, and elsewhere as indicated.

F. Install bus 18 inches above finished floor, unless otherwise indicated.

G. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, down to specified height above floor, and connect to horizontal bus.

H. Provide No. 2/0 AWG from each ground bus to building ground electrode system.

I. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connections.
2. Underground Connections: Welded connections.
3. Connections to Structural Steel: Welded connections.

3.2 BONDING

A. Insulated grounding bushings shall be installed to bond all feeder conduits to the transformer, switchboard, or panel ground bus at both ends of feeder raceways. Insulated grounding bushings shall also be installed in all feeder pull boxes to bond all conduits together. Jumpers or bonds shall be copper and sized in accordance with Table 250-95 of the National Electrical Code.

3.3 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Grounding Vaults and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so four inches will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 1/0 AWG bare, tinned-copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from two inches above to six inches below concrete. Seal floor opening with waterproof, nonshrink grout.

B. Grounding Connections to Vault Components: Bond exposed-metal parts such as inserts, cable racks, pulling irons, ladders, and cable shields within each vault or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG minimum, stranded, hard drawn copper bonding conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields as recommended by manufacturer of splicing and termination kits.

C. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items by connecting them to the grounding electrodes. Install tinned-copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than six inches from the foundation.

3.4 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors in all power and lighting raceways.

B. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

C. Signal and Communication Equipment: Provide No. 4 AWG minimum insulated grounding conductor in raceway from building grounding electrode system to each telecommunications room, control panel and terminal cabinet.

D. Telecommunications Rooms: Terminate grounding conductor on a 1/4" x 2" x 12" grounding bus unless otherwise indicated.

E. Control Panels and Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

F. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.5 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are two inches below finished floor or final grade, unless otherwise indicated.

C. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.

D. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

E. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

F. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

G. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly-mounted equipment.

H. Use exothermic-welded connectors for outdoor locations. I. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.

I. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

J. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet apart. Install tinned-copper conductor not less than No. 2/0 AWG between ground rods to form a ground ring. Bond columns to ground ring with No. 2/0 AWG.

K. Ufer Ground (Concrete-Encased Grounding Electrode): Fabricate according to NFPA 70, using a minimum of 20 feet of bare copper conductor not smaller than No. 4 AWG.

L. If concrete foundation is less than 20 feet long, coil excess conductor within base of foundation.

M. Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts. Extend grounding conductor below grade and connect to building grounding electrode system.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Grounding and Bonding shall be considered incidental to other items.

## SP12 - HANGERS AND SUPPORTS

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. IMC: Intermediate metal conduit.

C. RMC: Rigid metal conduit.

1.3 SUBMITTALS

A. Product Data: Submit for each of the products provided.

### PART 2 – PRODUCTS

2.1 SUPPORT, ANCHORAGE AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper B-Line
2. Thomas & Betts
3. Unistrut

C. Metallic Coatings: Hot-dip galvanized after fabrication.

D. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating.

E. Painted Coatings: Manufacturer's standard painted coating.

F. Channel Dimensions: Selected for applicable load criteria.

G. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

H. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

I. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened Portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used. Subject to compliance with requirements, provide products by one of the following manufacturers:
    a. Hilti
    b. ITW Ramset/Red Head
    c. Simpson Strong-Tie
2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use inhardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used. Subject tocompliance with requirements, provide products by one of the following manufacturers:
    a. Cooper B-Line
    b. Hilti
    c. ITW Ramset/Red Head
3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

## PART 3 – EXECUTION

### 3.1 APPLICATION

A. Conduit Crossing Structural Separation: Conduit that crosses structural or seismic separations between building units shall be installed with flexible connections, suitable to accommodate longitudinal and transverse displacements. Secure raceways each side of joint and provide minimum of 36 inches length flexible conduit between building units.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 3/8 inch in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at

least 25 percent in future without exceeding specified design load limits. Secure raceways and cables to these supports with two-bolt conduit clamps.

D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1- 1/2-inch and smaller raceways serving branch circuits and low-voltage systems above suspended ceilings and for fastening raceways to trapeze supports.

## 3.2 SUPPORT INSTALLATION

A. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

B. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners. In lieu of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete four inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than four inches thick.
5. To Steel: Beam clamps.
6. To Light Steel: Sheet metal screws.

C. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

## 3.3 CONCRETE BASES

A. Provide four-inch high concrete pads with chamfered edges for all floor-mounted equipment including switchboards, distribution panels, transformers, motor control centers and unit substations.

B. Construct concrete bases of dimensions indicated but not less than four inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

C. Use 3000-psi, 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Division 03 Section.

D. Anchor equipment to concrete bases.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Hangers and Supports shall be considered incidental to other items.

## SP13 - RACEWAY AND BOXES

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. FMC: Flexible metal conduit.

C. LFMC: Liquidtight flexible metal conduit.

D. RMC: Rigid metal conduit.

E. RNC: Rigid nonmetallic conduit.

1.3 SUBMITTALS

A. Product Data: Submit for each type of product provided.

### PART 2 – PRODUCTS

2.1 METAL CONDUIT AND TUBING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable
2. Allied Tube
3. Electri-Flex

B. Rigid Metal Conduit (RMC):

1. General: Comply with ANSI C80.1.
2. Fittings:
3. Couplings: Threaded metallic type of the same material as the conduit.
    a. Locknuts: Steel up to two inches, malleable iron for 2-1/2 inches and larger.
    b. Bushings: Bakelite or plastic up to two inches, malleable iron with insulating collar for 2-1/2 inches and larger.
    c. Unions: Zinc plated malleable iron, three-piece coupling.

C. Electrical Metallic Tubing (EMT):

1. General: Comply with ANSI C80.3.
2. Fittings:
    a. 1-1/2 inches and smaller: Steel raintight type employing a split corrugated ring and tightening nut.

b. Two inches and larger: Steel set-screw-type containing dual set-screws on each side of coupling.

D. Flexible Metallic Conduit (FMC):
1. General: Zinc-coated steel.
a. Fittings: Steel, one- or two-screw clamp type.

E. Liquid-Tight Flexible Metallic Conduit (LFMC):
1. General: Flexible steel conduit with PVC jacket.
2. Fittings: Galvanized steel, compression type.

2.2 NONMETALLIC CONDUIT AND TUBING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AFC Cable
2. Anamet
3. Electri-Flex
4. Carlon

B. Rigid Nonmetallic Conduit (RNC):
1. General: Comply with NEMA TC 2, Type EPC-40-PVC, unless otherwise noted.
2. Fittings: Comply with NEMA TC 3, same material as the conduit.

2.3 SURFACE METAL RACEWAYS (SMR)

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Thomas & Betts
2. Wiremold

B. Color: Ivory

C. Single-Channel Raceway: Two-piece raceway with a single compartment and snap cover. Provide raceways with nominal dimensions as follows: Raceway fill shall not exceed 40%.

D. Power Conductors:
1. Up to Three #12 AWG Conductors: 21/32" x 3/4".
2. Up to Six # 12AWG Conductors: 1-9/32" x 3/4".

E. UTP Cables:
1. Up to Two Cables: 1-9/32" x 3/4".
2. Up to (15) Cables: 2-3/4" x 1-7/16".
3. More than 15 Cables: Provide multiple raceways.

F. Other Low-Voltage Cables:
1. One Cable: 21/32" x 3/4".

2. More Than One Cable: Size raceway for 40% full. Maximum raceway size shall be 2- 3/4" x 1-7/16".

G. Two-Channel Raceway:

1. Raceway fill shall not exceed 40 percent.
2. Provide where shown on the drawings.
3. Raceway: Two-piece raceway with divider and snap cover. Nominal dimensions shall be 4-3/4" x 1-3/4".
4. Device-Mounting Brackets: High-impact plastic bracket with trim plate. Trim plate shall overlap raceway cover for a seamless transition between cover fittings. Provide insert for each device installed. Provide blank insert where only one device is provided.

2.4 BOXES, ENCLOSURES AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

B. Small Sheet Metal Pull and Junction Boxes: Comply with NEMA OS 1.

C. Hinged-Cover Enclosures: NEMA 250, Type 1, steel, continuous-hinge cover with flush latch,
finished inside and out with manufacturer's standard enamel.

D. Cabinets:

1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable
front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.
4. Provide metal barriers to separate wiring of different systems and voltage.

**PART 3 – EXECUTION**

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:

1. Exposed Conduit: RMC.
2. Concealed Conduit, Above Ground: RMC.
3. Underground Conduit: RNC with RMC elbows.
4. Connection to Vibrating Equipment (Including Transformers and Motor-Driven equipment): LFMC.
5. Boxes and Enclosures, Above Ground: NEMA 250, Type 3R.
6. Indoors: Apply raceway products as specified below unless otherwise indicated:

a. Exposed, Not Subject to Physical Damage: EMT.

7. Exposed and Subject to Physical Damage: RMC. Includes raceways in the following locations:
    a. Loading docks.
    b. Corridors used for traffic of mechanized carts, forklifts and pallet-handling units.
8. Concealed in Ceilings and Interior Walls and Partitions: EMT.
9. Connection to Vibrating Equipment (Including Transformers and Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
10. Damp or Wet Locations: RMC.
11. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 3R, in damp or wet locations.

B. Minimum Raceway Size:

1. General: 3/4 inches unless otherwise indicated.
2. Raceways with no more than three No. 12 AWG conductors shall be 1/2 inches unless otherwise indicated.

3.2 INSTALLATION

A. All raceways shall be concealed in finished areas. Where existing wall surfaces are
inaccessible, surface metal raceways shall be provided. Raceways may be surface-mounted in unfinished equipment spaces such as mechanical rooms, electrical rooms, elevator machine rooms and attic spaces.

B. All branch-circuit raceways in telecommunications rooms shall be concealed within wall.

C. Install exposed raceways as high as possible, above ductwork, parallel or at right angles to building lines.

D. Raceways shall not be installed in concrete slab or wall construction when passing through an expansion or earthquake joint.

E. Raceways shall be installed in furred or suspended ceiling spaces with a minimum of 36 inches of flexible conduit crossing the expansion or earthquake joints. Secure raceways each side of joint.

F. All raceways shall be installed parallel or at right angles to the building construction. This applies to all exposed raceways as well as all raceways above suspended ceiling.

G. Raceways shall not be run under heavy equipment, footings or other structural elements that might adversely affect the integrity of the raceways system or building structure. All raceways installed above suspended ceilings shall be a minimum of six inches clear above top of ceiling system.

H. Raceways shall not be installed in floor slabs or structural columns.

I. Underground Metallic Raceways or Metallic Raceways in Contact with Concrete: Wrap conduit with 0.010-inch thick pipe-wrapping plastic tape applied with a 50 percent overlap. 3M or equal.

J. Pullboxes with Covers: Provided as shown on the drawings and as required by the NEC. All pullboxes shall be accessible.

K. Exterior Walls: Conduits passing through exterior walls below grade and/or bridging an area which was previously excavated and backfilled shall be rigidly supported by a structurally reinforced concrete duct bank spanning between the building wall and a bearing surface on undisturbed earth.

L. The interior and exterior of all conduits and other raceways shall be thoroughly cleaned of all material. All conduits shall be capped or plugged after installation.

M. Keep raceways at least six inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

N. Complete raceway installation before starting conductor installation.

O. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

P. Install no more than the equivalent of three 90-degrees bends in any conduit run except for communications, safety and security conduits, for which fewer bends are allowed.

Q. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints.

R. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.

S. Provide pull strings in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.

T. Install raceway sealing fittings at suitable, approved and accessible locations and fill them with listed sealing compound. Install each fitting for concealed raceways in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

U. Expansion-Joint Fittings for RNC: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 degrees F, and that has straight-run length that exceeds 25 feet.

1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:
2. Outdoor Locations Not Exposed to Direct Sunlight: 125 degrees F temperature change.
3. Outdoor Locations Exposed to Direct Sunlight: 155 degrees F temperature change.
4. Indoor Spaces: Connected with the Outdoors without Physical Separation: 125 degrees F temperature change.
5. Attics: 135 degrees F temperature change.
6. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per degree F of temperature change.
7. Install each expansion-joint fitting with position, mounting and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.

V. Flexible Conduit Connections: Use maximum of eight feet of flexible conduit for recessed and semirecessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.
2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

W. Recessed Boxes in Masonry Walls: Sawcut opening for box in center of cell of masonry block and install box flush with surface of wall.

X. Floor Boxes: Set floor boxes level and flush with finished floor surface.

## 3.3 SURFACE METAL RACEWAYS

A. Provide all required fittings for a complete installation.

B. Raceways serving two-channel raceway shall be fully concealed within wall construction or above suspended ceiling U.O.N.

C. Provide a separate, continuous ground conductor for all power circuits.

## 3.4 RACEWAYS AND CABLE INSTALLATION PATHWAYS FOR LOW-VOLTAGE SYSTEMS

A. Installation of Raceways/Pathways for low-voltage systems shall be in accordance with the applicable portions of ANSI/TIA/EIA-569-A, Commercial Building Standards for Telecommunications Pathways and Spaces.

B. Raceways Above Lay-in Ceilings: Do not install cables in conduits that are supported from the ceiling suspension system. All conduits shall be supported independently of the ceiling support system.

C. Raceways fill shall not exceed 40 percent.

D. Bend radii for raceways shall meet the following requirements:

1. If the raceway has an internal diameter of two inches or less, the bend radius must be at least six times the internal conduit diameter.
2. If the raceway has an internal diameter of more than two inches, the bend radius must be at least 10 times the internal conduit diameter.

E. There shall be no more than two 90 degrees bends between pull points in raceways without derating of the conduit capacity. The conduit capacity shall be derated by 15 percent for each additional 90 degrees bend. Increase conduit size as required to meet conduit fill requirements of this section with the derated capacity accounted for, or, provide pull boxes to eliminate 90 degrees bends as necessary to avoid having to derate conduit. Offsets shall be considered as equivalent to a 90 degrees bend. Pull boxes added to conduit runs as of result of this requirement shall be in accordance with this section.

F. Raceways which are terminated at cable trays shall be supported from structure with a maximum distance of 24 inches from the tray. Raceways terminated at cable trays shall be bonded to the tray.

G. Exterior raceways shall be Schedule 40 PVC with RMC elbows transitioning to RMC for Service Entrances. Interior conduit for vertical riser cable shall be RMC sized according to ANSI/TIA/EIA-568-A-5 or as indicated on the Contract Drawings. Interior raceways for horizontal cable shall be EMT, sized according to ANSI/TIA/EIA-568-A-5 standards or as indicated on the Contract Drawings.

H. Flexible conduit shall be kept to a minimum and shall only be used with prior written approval in length not exceeding four feet. If used, flexible metal conduit shall be increased by one trade size for the application used.

I. Raceways entering telecommunications rooms through the floor shall be terminated four inches above finished

floor. Raceways entering the rooms from above shall be terminated four inches below the finished ceiling, but in no case shall the conduits terminate greater than 12 inches above the cable tray or distribution frame.

J. Conduits and cutout openings between floors shall be sealed with removable and reusable firestopping material to accommodate adds, moves, and changes in the cabling system.

K. All raceways used for routing of low-voltage cables shall have bushings at all stubouts.

## 3.5 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:
Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench
bottom as specified in Division 31, Section 312000, "Earth Moving" for pipe less than six
inches in nominal diameter.

1. All backfill shall be imported structure fill or gravel borrow according to WSDOT
standards.
2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of
conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 31, Section 312000,"Earth Moving."
3. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
4. Elbows: All elbows shall be RMC.
    a. Couple steel conduits to ducts with adapters designed for this purpose and encase coupling with three inches of concrete.
    b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation.
    c. Install insulated grounding bushings on terminations at equipment.

## 3.6 SLEEVE-SEAL INSTALLATION

A. Install to seal underground, exterior wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for raceway material and size. Position raceway in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.7 FIRESTOPPING

A. Provide firestopping to electrical penetrations of fire-rated floor, wall and ceiling assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07, Section 078413, "Penetration Firestopping."

B.

**PART 4 – MEASUREMENT AND PAYMENT**

4.1 Raceway and Boxes is considered incidental to other items.

## SP14 - IDENTIFICATION

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of product provided.

### PART 2 – PRODUCTS

2.1 RACEWAY IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Color for Printed Legend:

1. Lighting and Power Circuits: White letters on a black field.
2. Other Low-Voltage Systems: White letters on a black field.

C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

D. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant two inches wide and compounded for outdoor use.

2.2 FASTENERS FOR LABELS AND SIGNS

A. Stainless steel machine screws with nuts and flat and lock washers in outdoor locations, and contact-type permanent self adhesive in indoor locations.

2.3 CONDUCTOR AND COMMUNICATION AND CONTROL-CABLE IDENTIFICATION MATERIALS

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than three mils thick by one to two inches wide.

B. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type with circuit identification legend machine printed by thermal transfer or equivalent process.

C. Write-On Tags: Polyester tag, 0.015 inch thick with corrosion-resistant grommet and polyester or nylon tie for attachment to conductor or cable. Uses permanent, waterproof, black ink marker recommended by tag manufacturer.

2.4 UNDERGROUND-LINE WARNING TAPE

A. Description: Permanent, bright-colored, continuous-printed polyethylene tape.
   1. Compounded for permanent direct-burial service.
   2. Embedded continuous metallic strip or core.
   3. Printed legend shall indicate type of underground line.

2.5 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory printed, multicolor, pressure-sensitive adhesive labels configured for display on front cover, door or other access to equipment, unless otherwise indicated.

C. Warning label and sign shall include, but are not limited to, the following legend: Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

2.6 EQUIPMENT NAMEPLATES

A. General: Nameplates shall be 1/16" thick laminated plastic with engraved letters.

B. Color for Nameplates:
   1. Lighting and Power: White letters on a black field.
   2. Fire Alarm: White letters on a red field.
   3. Other Low-Voltage Systems: White letters on a black field.

2.7 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Cable Ties: Fungus-inert, self-extinguishing, one-piece, self-locking, Type 6/6 nylon cable ties.
   1. Minimum Width: 3/16 inch.
   2. Tensile Strength: 50 lb, minimum.
   3. Temperature Range: - 40 to +185 degrees Fahrenheit.
   4. Color: Black, except where used for color-coding.

**PART 3 – EXECUTION**

3.1 APPLICATION

A. Raceways and Duct Banks More Than 600 Volts Concealed within Buildings: Four-inch wide black stripes on 10-inch centers over orange background that extends full length of raceway or duct and is 12 inches wide. Stencil legend "DANGER: CONCEALED HIGH-VOLTAGE WIRING" with three-inch high black letters on 20-inch centers. Stop stripes at legends. Apply to the following finished surfaces:
   1. Accessible surfaces of concrete envelope.

2. Around raceways in vertical shafts.
3. Exposed in the building.
4. Concealed above suspended ceilings.

B. Accessible Raceways More Than 600 Volt: Identify with "DANGER: HIGH-VOLTAGE" in black letters at least two inches high with self-adhesive vinyl labels. Repeat legend at 10-foot maximum intervals.

C. Power-Circuit Conductor Identification: Use color-coding conductor tape for conductors No. 1/0 AWG and larger in vaults, pull and junction boxes, vaults and handholes. Identify source and circuit number of each set of conductors. Identify phase in addition to the above for single conductor cables.

D. Branch-Circuit Conductor Identification: Use marker tape where there are conductors for more than three branch circuits in same junction or pull box. Identify each ungrounded conductor according to source and circuit number.

E. Conductors to be Extended in the Future: Attach write-on tags to conductors and list source and circuit number.

F. Auxiliary Electrical Systems Conductor Identification: Identify all control and low-voltage systems wiring as follows:
1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with manufacturer's shop drawings.

G. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable. Install underground-line warning tape for both direct-buried cables and cables in raceway.

H. Equipment Identification Labels:
1. Switchboards and Distribution Panelboards: Provide nameplate that identifies the switchboard/distribution panel and the source panel. (Example: Distribution Panel No. 1/Fed from Main Service Switchboard - Bkr. No. 1.) Provide nameplate at each overcurrent device that identifies the device number and the load served. (Example: Bkr. No. 1/Panel A)
2. Panelboards: Provide nameplate on the front of the panel cover that identifies the panel. (Example: Panel A.) Provide a nameplate concealed behind the door which identifies the panel and the source panel. (Example: Panel A, fed from Distribution Panel 1-Bkr. No. 2)

3. Transformers: Provide nameplate identifying the transformer, the source panel and the panel served. (Example: Transformer T1/fed from Distribution Panel 1, Bkr. No. 1/Serves Panel A)
4. Disconnect Switches and Enclosed Controllers: Provide nameplate that identifies the source panel and load served. (Example: Panel A-1, 3, 5/Exhaust Fan No.1)
5. Variable Frequency Drives: Provide nameplate which identifies the source panel and load served. (Example: Panel A-1, 3, 5/Exhaust Fan No. 1)

I. Junction and Pull Box Identification: Mark the cover of all junction boxes and pull boxes to identify the system, circuits, or feeders contained within the box. Use red color for fire alarm. Circuits shall be identified by panelboards and specific circuit numbers contained within the junction box.

J. Color-Coding for Phase and Voltage Level Identification, 600 Volt and Less: Use the colors listed below for ungrounded conductors:

1. Colors for 208/120-Volt Circuits:
    a. Phase A: Black
    b. Phase B: Red
    c. Phase C: Blue
    d. Neutral: White
    e. Ground: Green
    f. Travelers: Yellow
2. Colors for 480/277-Volt Circuits:
    a. Phase A: Brown
    b. Phase B: Orange
    c. Phase C: Yellow
    d. Neutral: Gray
    e. Ground: Green
    f. Travelers: Lavender
3. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of six inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

K. Arc Flash Hazard Labels:

1. Provide label on all distribution equipment that designates the appropriate PPE (Personal Protective Equipment) required for the hazard present. Labels to comply with the NEC and NFPA 70E. Submit sample of label to Engineer for review.
2. Refer to Division 26, Section 260573, "Overcurrent Protective Device Coordination Study."

3.2 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Self-Adhesive Identification Products: Clean surfaces before application using materials and methods recommended by manufacturer of identification device.

E. Attach nonadhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.

F. System Identification Color Banding for Raceways and Cables: Each color band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

G. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at six to eight inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

H. Painted Identification: Prepare surface and apply paint according to Division 09 painting sections.

**PART 4 – MEASUREMENT AND PAYMENT**

4.1 Identification is considered incidental to other items.

# SP15 - PANELBOARDS

## PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of panelboard, overcurrent protective device, transient voltage suppression device and accessory provided.

1.3 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction including conduit, piping, equipment, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

1.4 SELECTIVE COORDINATION

A. The emergency distribution system shall be selectively coordinated.

## PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Panelboards and Overcurrent Protective Devices:
      a. Square D
      b. General Electric
      c. Siemens
      d. Eaton
   2. Transient Voltage Suppression Panelboards:
      a. Square D
      b. General Electric
      c. Siemens
      d. Eaton

B. The basis of design for this project is Square D. Other manufacturers are acceptable only if their equipment dimensions are equal to or smaller than Square D.

2.2 FABRICATION

A. Enclosures:
   1. Rated for environmental conditions at installed location.
      a. Outdoor, Wet or Damp Locations: NEMA 250, Type 3R.

b. Kitchen Areas: NEMA 250, Type 4X, stainless steel.

2. Doors: Door-within-door type.
3. Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.
4. Directory Card: Provide transparent protective cover, mounted in metal frame, inside panelboard door.

B. Phase and Ground Buses:

1. Material: Hard-drawn copper, 98 percent conductivity or aluminum.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.

C. Conductor Connectors: Suitable for use with conductor material.

1. Main and Neutral Lugs: Compression type.
2. Ground Lugs and Bus Configured Terminators: Compression type.
3. Feed-Through Lugs: Compression type suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.

D. Service Equipment Label: UL labeled for use as service equipment for panelboards with main service disconnect switches.

E. Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

2.3 SHORT-CIRCUIT RATING

A. Series or fully rated to interrupt the symmetrical short-circuit current available at the terminals.

2.4 DISTRIBUTION PANELBOARDS

A. Branch Overcurrent Protective Devices:

1. Circuit-Breaker Frame Sizes 125 Ampere and Smaller: Bolt-on circuit breakers.
2. Circuit-Breaker Frame Sizes Larger Than 125 Ampere: Bolt-on circuit breakers; plug-in circuit breakers where individual positive-locking device requires mechanical release for removal.

B. Doors: secured with vault-type latch with tumbler lock; keyed alike.

2.5 PANELBOARDS

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

B. Doors: concealed hinges; secured with flush latch with tumbler lock; keyed alike.

2.6 TRANSIENT VOLTAGE SUPPRESSION PANELBOARDS

A. Branch Overcurrent Protective Devices: Bolt-on circuit breakers.

B. Doors: Door-within-door type, concealed hinges; secured with vault-type latch with tumbler lock; keyed alike.

C. Transient Voltage Suppression Device: IEEE C62.41, integrally mounted, plug-in-style, solid-state, parallel-connected, sine-wave tracking suppression and filtering modules.

1. Minimum Single-Impulse Current Ratings:
    a. Line-to-Neutral: 100,000 ampere.
    b. Line-to-Ground: 100,000 ampere.
    c. Neutral-to-Ground: 50,000 ampere.
2. Protection modes shall be as follows:
    a. Line-to-neutral.
    b. Line-to-ground.
    c. Neutral-to-ground.
3. EMI/RFI Noise Attenuation Using 50-ohm Insertion Loss Test: 55 dB at 100 kHz.
4. Maximum Category C Combination Wave Clamping Voltage: 600-volt, line-to-neutral and line-to-ground on 120/208-volt systems.
5. Maximum UL 1449 Clamping Levels:
    a. 400-volt, line-to-neutral and line-to-ground on 120/208 volt.
    b. 800-volt, line-to-neutral and line-to-ground on 277/480-volt systems.
6. Withstand Capabilities: 3000 Category C surges with less than five percent change in clamping voltage.

2.7 OVERCURRENT PROTECTIVE DEVICES

A. Molded-Case Circuit Breaker: UL 489 with interrupting capacity to meet available fault currents. Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250A and larger.

2.8 SPACE FOR FUTURE CIRCUIT BREAKRS OR FUSED SWITCHES

A. Provide as indicated on the drawings. Spaces shall be completely equipped for the future addition of a circuit breaker or fused switch, including all mounting hardware and buss connections. Unless otherwise noted, spaces shall be sized to accommodate the following future circuit breaker or fused switch:

Panel Rating Minimum Space Ampacity

| | |
|---|---|
| 100 Amperes | 70 Amperes |
| 225 Amperes | 125 Amperes |
| 400 Amperes | 225 Amperes |
| 600 Amperes | 400 Amperes |
| 800 Amperes | 600 Amperes |
| 1200 Amperes | 800 Amperes |

2.9 INSTRUMENTATION

A. Provide digital power monitor which displays:

1. Phase-to-phase and phase-to-neutral voltage on all three phases.
2. Current on all three phases and the neutral.
3. Power factor, kW, and kVA.
4. KWH, revenue-grade, nonresetable. KWH meter to have pulsed output, same as utility meter.

**PART 3 – EXECUTION**

3.1 INSTALLATION

A. Mount top of trim 74 inches above finished floor, unless otherwise indicated.

B. Mount plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

C. Install overcurrent protective devices and controllers. Set field-adjustable switches and circuit-breaker trip ranges.

D. Install filler plates in unused spaces.

E. Stub four one-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four one-inch empty conduits into raised floor space or below slab not on grade.

F. Arrange conductors in gutters into groups and bundle and wrap with wire ties.

3.2 DIRECTORY

A. Provide a directory to indicate installed circuit loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

3.3 IDENTIFICATION DEVICES

A. Label each panelboard with an engraved laminated plastic nameplate as specified in Division 26, Section 260553, "Identification."

3.4 TESTING

A. After all wiring is complete, all feeder and branch circuit terminations shall be checked with a torque wrench. Torque levels shall be in accordance with NETA Standard ATS un-

less otherwise specified by the manufacturer. A test report which gives the following information for each panelboard shall be submitted to the Engineer two weeks prior to final inspection:

1. Size and insulation type of the phase, neutral and ground conductors.
2. Phase-to-phase and phase-to-neutral operating load voltage.
3. Operating load current (each phase, neutral and ground).

B. Phase-to-phase and phase-to-neutral conductor insulation resistance. Test shall be made with a DC "Megger" (500-volt minimum) type tester. If tests indicate faulty insulation (less than 8 megohms), the conductors shall be replaced and retested.

C. A copy of the test report shall be included in the Operations and Maintenance Manual.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Panelboards is considered incidental to other items.

## SP16 - WIRING DEVICES

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of product provided.

1.3 COORDINATION

A. Receptacles for Owner-Furnished Equipment: Match plug configurations.

### PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper
2. Hubbell
3. Leviton
4. Pass & Seymour

2.2 STRAIGHT BLADE RECEPTACLES

A. Convenience Receptacles, 125-volt, 15 ampere, NEMA 5-15R. Subject to compliance with requirements, provide one of the following products:

1. Cooper; 5252 (duplex)
2. Hubbell; 5252 (duplex)
3. Leviton; 5252 (duplex)
4. Pass & Seymour; 5252 (duplex)

B. Dedicated Receptacles, 125-volt, 20 ampere, NEMA 5-20R. Subject to compliance with requirements, provide one of the following products:

1. Cooper; 5252 (duplex)
2. Hubbell; 5252 (duplex)
3. Leviton; 5252 (duplex)
4. Pass & Seymour; 5252 (duplex)

C. Isolated-Ground, Duplex Convenience Receptacles, 125-volt, 20 ampere, NEMA 5-20R. Subject to compliance with requirements, provide one of the following products:

1. Hubbell; CR 5253IG
2. Leviton; 5362-IG
3. Pass & Seymour; IG6300

D. Tamper-Resistant Convenience Receptacles, 125-volt, 20 ampere, NEMA 5-50R. Subject to compliance with requirements, provide one of the following products:

1. Cooper; TR8300
2. Hubbell; BR2OTR series
3. Leviton; 8300-SGG
4. Pass & Seymour; 63H

E. Transient Voltage Surge Suppressor (TVSS) Receptacles, 120-volt, 20 ampere, NEMA 5-20R. Subject to compliance with requirements, provide one of the following products:

1. Pass & Seymour; IG 6362-050
2. Hubbell; IG 536ZOSA

2.3 GFCI RECEPTACLES

A. General Description: Straight blade, non-feed-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is lighted when device is tripped.

B. Duplex GFCI Convenience Receptacles, 125-volt, 20 ampere: Subject to compliance with requirements, provide one of the following products:

1. Cooper; GF20
2. Hubbell; GF20 LA series
3. Pass & Seymour; 2084

2.4 SNAP SWITCHES

A. Comply with NEMA WD 1 and UL 20.

B. Switches, 120/277 Volt, 20 Amperes: Subject to compliance with requirements, provide one of the following products:

1. Cooper; 2221 (single pole), 2222 (two pole), 2223 (three way), 2224 (four way)
2. Hubbell; 1221 (single pole), 1222 (two pole), 1223 (three way), 1224 (four way)
3. Leviton; 1221-2 (single pole), 1222-2 (two pole), 1223-2 (three way), 1224-2 (four way)
4. Pass & Seymour; 20AC1 (single pole), 20AC2 (two pole), 20AC3 (three way), 20AC4 (four way)

C. Pilot Light Switches, 20 Ampere: Subject to compliance with requirements, provide one of the following products:

1. Cooper; 2221PL for 120 Volt and 277 Volt
2. Hubbell; HPL1221PL for 120 Volt and 277 Volt
3. Leviton; 1221-PLR for 120 Volt, 1221-7PLR for 277 Volt
4. Pass & Seymour; PS20AC1-PLR for 120 Volt

D. Key-Operated Switches, 120/277 Volt, 20 Ampere: Subject to compliance with requirements, provide one of the following products:

1. Cooper; 2221L

2. Hubbell; HBL1221L
3. Leviton; 1221-2L
4. Pass & Seymour; PS20AC1-L

2.5 WEATHERPROOF RECEPTACLES

A. Provide gasketed cast aluminum receptacle cover.

2.6 DEVICE PLATES

A. Finished Areas-Surface or Flush-Mounted: 302 stainless steel or approved equal

B. Unfinished Areas-Surface-Mounted Devices: 4/S raised steel.

2.7 FINISHES

A. Color:

1. Wiring Devices Connected to Normal Power System: Ivory.
2. Wiring Devices Connected to Generator: Red.
3. Isolated-Ground Receptacles: Orange.

**PART 3 – EXECUTION**

3.1 INSTALLATION

A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.

B. Coordination with Other Trades:

1. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
2. Install device boxes in brick or block walls so that the coverplate does not cross a joint unless the joint is troweled flush with the face of the wall.
3. Install wiring devices after all wall preparation, including painting, is complete.

C. Conductors: The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300 without pigtails.

D. Device Installation:

1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.

4. Connect devices to branch circuits using pigtails that are not less than six inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-ampere circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation: Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the right.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Arrangement of Devices: Unless otherwise indicated mount flush with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

H. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

3.2 IDENTIFICATION

A. Receptacles: Laser-engrave faceplate with panel and circuit number.

B. Special Receptacles Other Than 15 or 20 Ampere, 120 Volt: Laser-engrave faceplate with ampere rating, voltage, phase, panel and circuit number.

C. Computer Receptacles: Laser-engrave "Computer" in 3/16 inches high letter on the top of the plate. Laser-engrave with panel and circuit number at the bottom of the plate.

D. Receptacles Installed in a Multi-System Wall Box: Labeled with panel and circuit number utilizing a computer-generated printed self-adhesive label.

3.3 INSTALLED SPARE DEVICES

A. Provide the following installed spare devices:

| Device | Quantity |
|---|---|
| Dedicated Duplex Receptacle | 5 |

B. Spare devices shall include 150 feet of conduit, faceplates, NEMA 3R enclosure, all required wire, cutting, patching and painting for a complete installation. Location of these units to be determined by the Owner's representative at the site. The Contractor shall assume that these devices will be installed after all other work is completed. Installation shall occur on an accelerated (night/weekend) schedule. Unused devices are to be (turned over) to the Owner.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Wiring devices is considered incidental to other items.

# SP17 - FUSES

## PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of product provided.

1.3 COORDINATION

A. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size.

## PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper Bussman
2. Ferraz Shawmut
3. Littelfuse

2.2 CARTRIDGE FUSES

A. Characteristics: NEMA FU 1, nonrenewable cartridge fuse; class and current rating indicated; voltage rating consistent with circuit voltage.

2.3 SPARE-FUSE CABINET

A. Cabinet: Wall-mounted, 0.05-inch thick steel unit with full-length, recessed piano-hinged door and key-coded cam lock and pull.

1. Size: Adequate for storage of spare fuses specified with 15 percent spare capacity minimum.
2. Finish: Gray, baked enamel.
3. Identification: "SPARE FUSES" in 1-1/2-inch high letters on exterior of door.
4. Fuse Pullers: Provide for each size of fuse.

## PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.

3.2 FUSE APPLICATIONS

A. Service Entrance: Class RK1, time delay.

B. Feeders: Class RK1, time delay.

C. Motor Branch Circuits: Class RK1, time delay.

3.3 INSTALLATION

A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

B. Install spare-fuse cabinet (if no location is shown, install in the Main Electrical Room).

3.4 SPARE FUSES

A. Provide one complete set of spare fuses (three fuses to a set) for each size and type shown. Install spare fuses in a spare fuse cabinet in the Main Electrical Room. Any spare fuses utilized during testing must be replaced in order to leave the Owner a complete set of spare fuses at completion of the project.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Fuses is considered incidental to other items.

## SP18 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of enclosed switch, circuit breaker and accessory being provided.

1.3 COORDINATION

A. Coordinate layout and installation of switches, circuit breakers, and components with other construction, including conduit, piping, equipment, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

### PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with the requirements, provide products by one of the following:

1. Square D
2. General Electric
3. Siemens
4. Eaton

B. The basis of design for this project is Square D. Other manufacturers are acceptable only if their equipment dimensions are equal to or smaller than Square D.

2.2 FUSIBLE AND NONFUSIBLE SWITCHES

A. Fusible Switch-600A and Smaller: NEMA KS 1, Type HD with clips or bolt pads to accommodate specified fuses, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.

B. Nonfusible Switch-600A and Smaller: NEMA KS 1, Type HD, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.

2.3 MOLDED-CASE CIRCUIT BREAKERS AND SWITCHES

A. Molded-Case Circuit Breaker: NEMA AB 1 with interrupting capacity to meet available fault currents. Provide with the following features and accessories:

1. Standard frame sizes, trip ratings, and number of poles.

2. Lugs: Mechanical style with compression lug kits suitable for number, size, trip ratings, and conductor material.
3. Application Listing: Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.

B. Molded-Case Switches: Molded-case circuit breaker with fixed, high-set instantaneous trip only, and short-circuit withstand rating equal to equivalent breaker frame size interrupting rating. Provide with the following features and accessories:

1. Lugs: Mechanical style with compression lug kits suitable for number, size, trip ratings, and material of conductors.
2. Application Listing: Type HACR for heating, air-conditioning, and refrigerating equipment.

2.4 ENCLOSURES

A. Rated for environmental conditions at installed locations.

1. Outdoor, wet or damp locations; NEMA 250, Type 3R.
2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
3. Other wet or damp indoor locations; NEMA 250, Type 4.

**PART 3 – EXECUTION**

3.1 INSTALLATION

A. Control Equipment Mounted to Walls: Mount adjacent units at uniform height. Bolt units to wall or mount on lightweight structural-steel channels bolted to wall. Provide freestanding racks complying with Division 26, Section 260529, "Hangers and Supports," for controllers not located on walls.

B. Floor-Mounted Control Equipment: Anchor to concrete base.

C. Install fuses in each fusible switch.

3.2 IDENTIFICATION DEVICES

A. Label each switch and circuit breaker on engraved laminated plastic as specified in Division 26, Section 260553, "Identification."

3.3 ADJUSTING

A. Set field-adjustable switches and circuit-breaker trip ranges.

3.4 TESTING

A. After all wiring to each unit is complete, the Electrical Contractor shall cooperate with the Mechanical Contractor in testing equipment for proper operation and correct wiring as required for proper operation. All connections shall be checked with a torque wrench. Torque levels shall be in accordance with NETA Standard ATS unless otherwise specified by the manufacturer. A test report which gives the following information for each motor shall be submitted to the Engineer two weeks prior to final inspection:

1. All nameplate data (voltage, phase, full-load current, locked motor current, NEMA design, code letter, RPM, etc.)
2. Measured no-load voltage at motor terminals (all phases)
3. Measured full-load voltage at motor terminals (all phases)
4. Full load operating current (all phases)
5. Motor starter manufacturer and overload heater number (attach the manufacturer's table of overload heater numbers and corresponding motor nameplate ranges)
6. Fuse size and type
7. Motor phase-to-phase and phase-to-ground winding resistance (motors five-HP and larger)

B. A copy of the test report shall be included in the Operations and Maintenance Manuals.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Enclose Switches and Circuit Breakers is considered incidental to other items.

## SP19 - ENCLOSED CONTROLLERS

### PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SUBMITTALS

A. Product Data: Submit for each type of enclosed controller and accessory being provided.

1.3 COORDINATION

A. Coordinate layout and installation of enclosed controllers with other construction including conduit, piping, equipment, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

### PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Square D
2. General Electric
3. Siemens
4. Eaton

B. The basis of design for this project is Square D. Other manufacturers are acceptable only if their equipment dimensions are equal to or smaller than Square D.

2.2 ACROSS-THE-LINE ENCLOSED CONTROLLERS

A. Manual Controller:

1. Generator: NEMA ICS 2, general purpose, Class A with "quick-make, quick-break" toggle or pushbutton action, and marked to show whether unit is "OFF," "ON," or "TRIPPED."
2. Overload Relay: Ambient-compensated type with inverse-time-current characteristics and NEMA ICS 2, Class 10 tripping characteristics. Relays shall have heaters and sensors in each phase, matched to nameplate, full-load current of specific motor to which they connect and shall have appropriate adjustment for duty cycle.
3. Accessories: Pilot light.

B. Magnetic Controller:

1. Generator: NEMA ICS 2, Class A, full voltage, nonreversing, across the line, NEMA 1 (minimum) unless otherwise indicated.

2. Control Circuit: 120 volt; obtained from integral control power transformer with a control power transformer of sufficient capacity to operate connected pilot, indicating and control devices, plus 100 percent spare capacity.
3. Adjustable Overload Relay: Dip switch selectable for motor running overload protection with NEMA ICS 2, Class 10 20 30 tripping characteristic and selected to protect motor against voltage and current unbalance and single phasing. Provide relay with Class II ground-fault protection with start and run delays to prevent nuisance trip on starting.
4. Accessories: Red pilot light, green pilot light, hand-off-automatic switch, 2-N.O. and 2-N.C. contacts.

C. Combination Magnetic Controller: Factory-assembled combination controller and disconnect switch.

1. Fusible Disconnecting Means: NEMA KS 1, heavy-duty, fusible switch with rejection-type fuse clips rated for fuses. Select and size fuses to provide Type 2 protection according to IEC 947-4-1, as certified by an NRTL.
2. Control Circuit, 120 volt: Obtained from integral control power transformer with a control power transformer of sufficient capacity to operate connected pilot, indicating and control devices, plus 100 percent spare capacity.
3. Adjustable Overload Relay: Dip switch selectable for motor running overload protection with NEMA ICS 2, Class 10 20 30 tripping characteristic and selected to protect motor against voltage and current unbalance and single phasing. Provide relay with Class II ground-fault protection with start and run delays to prevent nuisance trip on starting.
4. Accessories: Red pilot light, green pilot light, hand-off-automatic switch, 2-N.O. and 2-N.C. contacts.

2.3 REDUCED-VOLTAGE ENCLOSED CONTROLLERS

A. Autotransformer Reduced-Voltage Controller: NEMA ICS 2, closed transition.

2.4 ELEVATOR SERVICE DISCONNECT

A. Manufacturer: Bussman

B. General: Provide surface-mounted elevator power module switch located as shown on the drawings. Module switch assembly shall include shunt trip, fire interface relay, control power transformer with fuses, pilot lights and key to rest.

C. Automatic Service Disconnect:

1. Means shall be provided to automatically disconnect the main line power supply to the affected elevator

prior to the application of water in accordance with WAC 296-81-2787 and ANSI A17.1-102.2(C)4.

2. Fixed temperature heat detectors (135 degrees F) shall be provided at the top of the elevator hoistway and within the elevator equipment room to disconnect the main line power of the elevator prior to the application of water from the sprinkler.
3. Heat detectors shall be ceiling mounted and located within 18 inches of each sprinkler head. Heat detectors shall be an auxiliary function of the elevator equipment only, and shall be identified “Elevator Control Only - DO NOT TEST.”
4. Power for the automatic disconnect control circuit shall be derived from the load side of the elevator power main disconnecting means. The disconnect control device shall be located in the Elevator Equipment Room and shall be easily identifiable.

2.5 ENCLOSURES

A. Description: Flush- or surface-mounting cabinets as indicated. NEMA 250, Type 1, unless otherwise indicated to comply with environmental conditions at installed location.

1. Outdoor Locations: NEMA 250, Type 3R.
2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
3. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.

2.6 ACCESSORIES

A. Devices shall be factory installed in controller enclosure, unless otherwise indicated.

B. Push-Button Stations, Pilot Lights, and Selector Switches: NEMA ICS 2, heavy-duty type.

**PART 3 – EXECUTION**

3.1 INSTALLATION

A. Control Equipment Mounted to Walls: Mount adjacent units at uniform height. Bolt units to wall or mount on lightweight structural-steel channels bolted to wall. Provide freestanding racks complying with Division 26, Section 260529, "Hangers and Supports," for controllers not located on walls.

B. Floor-Mounted Control Equipment: Anchor to concrete base.

C. Install fuses in each fusible switch.

3.2 IDENTIFICATION DEVICES

A. Label each controller with an engraved laminated plastic as specified in Division 26, Section 260553, "Identification."

3.3 ADJUSTING

A. Set field adjustable overload relays.

3.4 TESTING

A. After all wiring to each unit is complete, the Electrical Contractor shall cooperate with the Mechanical Contractor in testing equipment for proper operation and correct wiring as required for proper operation. All connections shall be checked with a torque wrench. Torque levels shall be in accordance with NETA Standard ATS unless otherwise specified by the manufacturer. A test report which gives the following information for each motor shall be submitted to the Engineer two weeks prior to final inspection:

1. All nameplate data (voltage, phase, full-load current, locked motor current, NEMA design, code letter, RPM, etc.)
2. Measured no-load voltage at motor terminals (all phases)
3. Measured full-load voltage at motor terminals (all phases)
4. Full load operating current (all phases)
5. Motor starter manufacturer and overload heater number (attach the manufacturer's table of overload heater numbers and corresponding motor nameplate ranges)
6. Fuse size and type
7. Motor phase-to-phase and phase-to-ground winding resistance (motors five-HP and larger)

B. A copy of the test report shall be included in the Operations and Maintenance Manuals.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 Enclosed Controllers is considered incidental to other items.

**SP20 Field Sports Lighting**

## PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of contract, including General and Supplementary Conditions, Division-1 Specification sections and all Division-26 sections apply to work of this section.

1.2 BASE AND ALTERNATE SYSTEMS

A. The Basis-of Design sports lighting system shall be Musco Lighting. The drawings and specifications indicate locations and materials required for a Musco Lighting new/retrofit installation. This specification describes the requirements for providing a complete sports lighting system to illuminate the area indicated on the drawings and shall include all components for control and power distribution in the base bid.

B. Approved base bid, basis-of-design system manufacturer and representative:

1. Musco Lighting (208) 616-3258; Contact – Creighton Fuss

1.3 PRE-BID APPROVAL

A. Design Approval: The owner / engineer will review pre-bid submittals from other manufacturers to ensure compliance to the specification 15 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.

B. Approved Product: Musco's Light-Structure System™ with TLC for LED™ is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at least 15 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.

C. All manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.

D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

1.4 SUMMARY

A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.

B. The purpose of this specification is to define the lighting system performance and design standards for the playing field using an LED Lighting source. The manufacturer / contractor shall

supply lighting equipment to meet or exceed the standards set forth in these specifications.

C. The primary goals of this sports lighting project are:

1. Guaranteed Light Levels: Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore, light levels are guaranteed to not drop below specified target values for a period of 25 years.
2. Environmental Light Control: It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors. The LED design should provide better control than a good HID design.
3. Life-cycle Cost: In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
4. Control and Monitoring: To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.

D. All lighting designs shall comply with IBC 2015 110MPH, Exposure C.

1.5 LIGHTING PERFORMANCE

A. Illumination levels and design factors: playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the iesna lm-5-04 (iesna guide for photometric measurements of area and sports lighting installations). Illumination levels shall not to drop below desired target values in accordance to ies rp-6-15, page 2, maintained average illuminance and shall be guaranteed for the full warranty period.

| Area of Lighting | Average Target Illumination Levels | Maximum to Minimum Uniformity Ratio | Grid Points | Grid Spacing |
|---|---|---|---|---|
| Football | 30 | 1.5:1.0 | 72 | 30’ x 30’ |
| Soccer | 30 | 1.5:1.0 | 72 | 30’ x 30’ |
| Baseball and Softball Infield | 50 | 1.5:1.0 | 72 | 30’ x 30’ |

| | | | | |
|---|---|---|---|---|
| Baseball Outfield | 30 | 1.5:1.0 | 72 | 30’ x 30’ |

B. Color: the lighting system shall have a minimum color temperature of 5700k and a cri of 75.

C. Mounting heights: to ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

D.

| # of Poles | Pole Designation | Pole Height |
|---|---|---|
| 2 | A1,A2 | 70’ |
| 3 | A3,B1,B2 | 90’ |
| 2 | F1,F2 | 80’ |

1.6 ENVIRONMENTAL LIGHT CONTROL

A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.

B. Glare Control: Maximum candela at a distance of 150’ should be better than that of a comparable HID design. These values are defined for typical sports fields listed below.

| Typical Field Type | Maximum Candela at 150’ |
|---|---|
| Multi Uses Play Field | <24,000 candela |

1.7 LIFE-CYCLE COSTS

A. Manufacturer shall submit a 25-year life cycle cost calculation as outlined in the required submittal information.

B. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 25 years from the date of equipment shipment. Individual outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

**PART 2 - PRODUCT**

2.1 SPORTS LIGHTING SYSTEM CONSTRUCTION

A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.

B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated

with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel of 18-8 grade or better, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.

C. System Description: Lighting system shall consist of the following:
    1. Galvanized steel poles and cross-arm assembly. Poles shall have climbing steps, safety cable, and a maintenance platform at the top.
    2. Non-approved pole technology:
        a. Square static cast concrete poles will not be accepted
        b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns
    3. Lighting systems shall use concrete foundations. See Section 2.3 for details.
        a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
        b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-enforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
    4. Manufacturer will supply all drivers and supporting electrical equipment
        a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per

circuit for each pole structure will be located in the enclosure.

5. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
6. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
7. All luminaires, visors, and cross-arm assemblies shall withstand 150 mph winds and maintain luminaire aiming alignment.
8. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.4 for further details.
9. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
    a. Integrated grounding via concrete encased electrode grounding system.
    b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780.The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

D. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

A. Electric Power Requirements for the Sports Lighting Equipment:
    1. Distribution electrical power: 480Y/277V, 3 phase, 4 wire
    2. Fixture electric power: 480 Volt, 3 Phase
    3. Control Voltage: 120V
    4. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.

2.3 STRUCTURAL PARAMETERS

A. Wind Loads: Wind loads shall be based on the 2015 International Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 115 and exposure category C.

B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).

C. Foundation Design: The foundation design shall be based on soils that meet or exceed those of a Class 5 material as defined by 2015 IBC Table 1806.2.

2.4 CONTROL

A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.

B. System shall have two control zones.

1. Football/Soccer
2. All lights (Baseball/Softball)

C. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.

D. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

E. The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute “early off” commands by phone. Scheduling tool shall be capable of setting curfew limits.

F. Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

G. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).

H. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

I. Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field lighting system that is readily accessible to the owner.

1. Cumulative hours: shall be tracked to show the total hours used by the facility

2. Report hours saved by using early off and push buttons by users.

J. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

**PART 3 - EXECUTION**

3.1 BASE DESIGN

A. It shall be the lighting manufacturers responsibility to provide pole basis designed to withstand the wind load rating for the pole and fixture assembly for the site location; Sandpoint, Idaho, USA.

B. The base design shall be performed by a licensed professional structural engineer. Shop drawings for the base design shall be furnished bearing the structural engineer's signed stamp.

C. Upon request the base calculations shall be provided to the City of Sandpoint, architect and engineer.

D. The base design shall include all grounding requirements.

E. The contractor shall install the lighting base and provide grounding per the manufacturer's and NEC requirements.

3.2 SOIL QUALITY CONTROL

A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:

1. Providing engineered foundation embedment design by a registered engineer in the State of Washington for soils other than specified soil conditions;
2. Additional materials required to achieve alternate foundation;
3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.3 POWER DISTRIBUTION AND GROUNDING

A. Provide conduit and wiring buried a minimum of 36" below grade with traceable marking tape at 12" below finish grade. Route conduit outside artificial turf footprint as much as possible if required to be under turf route as close to edge as possible.

B. Provide pull boxes at each of the fixture pole bases.

C. Provide a minimum of (2) 10'x5/8" copper clad ground rod at each pole, separated by a minimum of 10'-0". The ground rod top shall be 6" below finished grade and located on the as-built drawings.

3.4 DELIVERY TIMING

A. Delivery Timing Equipment On-Site: The equipment must be on-site 6-8 weeks from receipt of approved submittals and receipt of complete order information.

3.5 FIELD QUALITY CONTROL

A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.

B. Field Light Level Accountability

1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 Years.
2. The contractor/manufacturer shall be responsible for an additional inspection one year from the date of commissioning of the lighting system and will utilize the owner’s light meter in the presence of the owner.
3. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.

C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner. Post installation adjustments shall include re-aiming fixtures, adding shielding and providing nighttime field measured documentation to verify that the lighting trespass footcandle and glare candela levels comply with the city of Spokane Valley. The contractor shall upon request conduct a demonstration to the city and owner’s representatives to confirm that the installation satisfies these requirements. The contractor shall provide all equipment including lifts to perform these adjustments and measurements.

3.6 WARRANTY AND GUARANTEE

A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.

B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field

is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

## PART 4 - MEASUREMENT AND PAYMENT

FIELD SPORTS LIGHTING

A. Relocation and installation of existing poles with new poles bases per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the installation, connection, testing and operation of all field sports lighting poles required for this project as shown on the Electrical Drawings specified herein
    1. Bid Schedule Payment Reference: SP20.4.1.A.1
    2. Bid Schedule Description: Section included in multiple bid schedule items
        a. Relocate and Install Existing Field Light Poles (2) to new location.

B. Upgrade Existing Field Lights to LED Fixtures per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the installation, connection, testing and operation of all field sports lighting required for this project as shown on the Electrical Drawings specified herein
    1. Bid Schedule Payment Reference: SP20.4.1.B.1
    2. Bid Schedule Description: Section included in multiple bid schedule items
        a. Upgrade Existing Field Lights to L.E.D. Fixtures.

C. Provide and install New Field Light pole and base with new LED Fixtures per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the installation, connection, testing and operation of all field sports lighting required for this project as shown on the Electrical Drawings specified herein
    1. Bid Schedule Payment Reference: SP20.4.1.C.1
    2. Bid Schedule Description: Section included in multiple bid schedule items
        a. New Field Light Pole w/ L.E.D. Fixtures

## SP21 - DATA-TELEPHONE

### PART 1 – GENERAL

1.1 SCOPE OF WORK

A. Provide a complete cable network as indicated on the Drawings and Specifications. Provide equipment cabinets at IDF locations (i.e. “Telecommunications Enclosure (TE)”) as indicated on Drawings. Provide LIU fiber optic patch panel and Category 6 Voice/Data patch panels at each IDF panel location and in the addition’s MDF main hub room panel enclosure. All cabling to be labeled as detailed herein. Owner to provide cross-connect labor and materials.

B. Provide all voice/data outlet boxes, pull boxes, plates and jacks. The jacks for both voice and data shall be the same RJ-45 Category 6. There is no distinction between voice and data jacks, as cross connect cables determine jack function at the IDF panel.

C. Installation of cable, equipment and terminations shall be performed by a full Leviton Certified Cable System (CCS) Company to maintain the existing data system warrantee by Leviton. All equipment and installation shall meet the requirements of the Leviton System Warrantee.

D. Provide Category 6 cables from the IDF voice/data patch panel to the individual voice/data jacks at the locations identified on the Drawing.

E. All active electronic devices and patch cables provided by Owner.

F. The MDF shall not contain any end user cross connects; i.e. the MDF shall not directly feed data taps in an adjacent area (this limits access to the MDF to authorized data personnel only, while non-data personnel have access to the IDFs for changing cross connect cables to accommodate changes in room/computer layout).

1.2 COMPLIANCE

A. The contractor installing the data cabling system shall be a fully Certified Cable System (CCS) company.

B. Comply with NEC and BICSI as applicable to construction, pathways, and installation of cables, wires, spaces, cable support and connectors.

C. Comply with EIA/TIA 568B, 606, and 607 standards for Category 6 cable, components, and installation (EIA/TIA 569).

D. Comply with the current BICSI, TDM manual for installation and termination of fiber optic cable.

1.3 PRODUCT SUBMITTALS AND AS-BUILT DRAWINGS

A. Before ordering any materials or equipment, the Contractor shall submit data for all materials and equipment specified in the Leviton System Warranty.

B. The submittal data shall be as follows:

1. Catalog Cuts: Furnish for all standard (off-the-shelf) catalog items. Catalog number, manufacturer, rating specifications for each type of distribution device and for each type of equipment rack and cabinet shall all be shown.
2. Shop Drawings: Furnish distribution system connection diagrams, riser diagrams and floor plan distribution system drawings.
3. Copy of Pre-Registration Warranty submitted to manufacturer.
4. Certificate of Calibration from the manufacturer(s) of all test equipment to be utilized during project.
5. Submittals, when approved, shall be an addition to these specifications and shall be in equal force in that no variation shall be permitted except with the written approval of the Owner. The Owner's approval of equipment shall not relieve the Contractor's responsibility for errors, as said approval is only general and is not intended to serve as a check and does not relieve the Contractor from furnishing materials and performing the work as required by the contract documents.
6. Three copies of submittals shall be submitted to the Project Manager for Owner's review. All information shall be folded to 8-1/2" x 11" in size. One (1) copy shall be returned to the Contractor. Contractor shall be responsible for making additional copies for his use.
7. Complete and accurate record drawings (and other required submittals) are important to the Owner. Proper documentation eliminates a significant amount of time and expense when maintenance, repair, alterations or expansion becomes necessary.
8. The Owner will not consider the obligations of the contract as being fulfilled, and will not grant final acceptance off the work of the contract until satisfactory record drawings (and other required submittals) have been received and reviewed.

## PART 2 – PRODUCTS

2.1 MATERIALS

A. Equipment and cabling shall meet the requirements of the Leviton system warranty.

B. Raceways, boxes, etc., shall be as specified in Sections 26 05 33 and 26 05 40

C. Cable Supports and Wraps

1. Cable J-Hook
   a. Approved manufactures are Caddy, B-Line, or equal.
   b. Bridle rings are not approved for use.
   c. J-Hook width shall be minimum 3/4". Provide size appropriate for conductor quantity. Multi-Tier

J-Hooks shall be provided to separate different low voltage systems where a common route or pathway is used.

2. Tie-Wrap:
    a. Approved manufactures are Leviton or equal.
    b. Tie-Wraps shall be recloseable loop wrap style. Available in 1/2" wide, 15'-75'bulk rolls of Hook and Loop Wrap, Leviton # 43115-015 and 43115-075.
    c. Plastic fasteners are not approved for use.

D. Equipment Rack: Wall-Mount Cabinet, 25.2"H x23.6"W, 12 U, Black finish. Chatsworth #25504-712. with double sided type Finger Cable vertical wire management on each side and CPI #12816-705 120V,20A, power strip.

E. Category 6 Voice/Data Patch Panels: Leviton, 24-port, #5G596-U24.

F. LIU Fiber Optic Patch Panels: Leviton, 6-pair LIU, Rack Mt./Loaded with 12 SC Connectors, Leviton #5R230-0HB.

G. Fiber Optic Cable: Berk-Tek 6-Strand; inside application; 62.5/125 graded index; Loss: -3.50 db/km & 220 MHZ/km @ 850 nm, 1.5 db/km & 600 MHZ/km @ 1300 nm. Riser (430066G01) or Plenum (440066G01). For cable routed underground provide OSP-rated cable.

H. Category 6 Cable: UTP cable shall be Data Grade meeting EIA/TIA 568B standards for Category 6 cable for application on 100 Mbps LAN system. The cable shall be Berk-Tek, 24 gauge, four twisted pair, solid copper conductors, plenum rated for plenum areas or as noted in these specifications or the Drawings. Plenum rated cable shall be white in color. Non-plenum rated cable shall be blue in color. Cable routed underground shall be rated OSP for that application.

I. Telephone cable: Berk-Tek 25 pair, #24 AWG, solid copper, color coded as per telephone industry standard. Cable routed underground shall be OSP-rated.

J. Voice/Data Jacks: Leviton, RJ-45 configuration multi-media jack, 568B compliant, flush mount. Leviton #5G110-RI5, where "I" is color.

K. Wall plate shall be single gang, 4- or 6-port ivory as indicated, with designation window, Leviton #42080-4IS or #42080-6IS, NO SUBSTITUTIONS.

L. Fiber Optic Connectors: Type SC. They shall meet the Leviton system warrantee standards. Leviton #49990-MSC.

M. Voice/Data concealed conduits shall be a minimum ¾"C. No exception.

EIA/TIA 568B

MINIMUM CABLE & COMPONENT SPECIFICATIONS

| Frequency | AWG | Impedance | Cable | | Connectors | | Channel | |
|---|---|---|---|---|---|---|---|---|
| | 22/24 | 100+15% | Atten | Next | Atten | Next | Atten | Next |
| 1 MHz | | | 2.0db | 65.3db | .1db | -65db | 2.2db | >60.0 |
| 4 MHz | | | 4.1db | | .1db | -65db | 4.5db | 53.5 |
| 10 MHz | | | 6.5db | 56.3db | .1db | -60db | 7.1db | 47.0 |
| 16 MHz | | | 8.2db | 50.3db | .2db | -56db | 9.1db | 43.6 |
| 20 MHz | | | 9.3db | | .2db | -54db | 10.2db | 42.0 |
| 100 MHz | | | 22.0db | 47.3db | .2db | -40db | | 30.1 |
| | | | | 45.8db | | | 24.0db | |
| | | | | 35.3db | | | | |

**PART 3 – EXECUTION**

3.1 INSTALLATION

A. Installation of cable equipment and terminations shall be performed by a fully Leviton Certified Cable System (CCS) company. See above for allowable contractors.

B. All labels will be machine generated.

C. All data device plates shall be labeled using the printed window labels showing room number, device box number, and jack number. Labeling sequence of device boxes shall occur in a counter-clockwise fashion when entering the room. (i.e. the third data jack in the second device box, in room 132 would be labeled as 132-2-3).

D. Tag all cables at both ends and at all intermediate pull boxes. All cables, fiber optic and Category 5e shall be labeled with a Brady ID PAL professional printer/labeler printed label. Cabling shall be labeled on each end of wire with Brady ID PAL labels of ¾" width or approved equal. Labeling shall be located within 4 inches of the end or termination of the wire / cable. Category 5e cables shall show room number, device box number, jack number (see example above). Fiber optic cabling shall be labeled showing room number and strand number.

E. All cables shall be run through walls in conduit stub-ups.

F. Install Category 6 cables in a continuous length from IDF location to outlet locations. Outlets shall be cabled to the IDF in the same room. In rooms without a dedicated IDF, outlets shall be cabled to the nearest IDF on the same floor unless noted otherwise.

G. LAN and other system cables in tunnels shall be supported with J-hooks on 3 foot centers. No other system cables shall be run with the data cables. Cables shall be loosely bundled (where grouped) and supported as required to prevent sharp bends or kinking. Support shall be adequate for the cable weight.

H. Bond all systems stub-ups and raceways per NEC requirements.

I. Sleeves shall be installed at each cable penetration through walls, floors and ceilings. Sleeves shall be minimum 3/4" with insulated inserts. Sleeves shall be installed regardless of wall type construction, fire rated or non-fire rated.

J. At fire walls provide 2" rigid steel conduit threaded nipples with bushings (both sides) or EMT fitted with threaded, nylon throated end connectors. Provide fire seal as specified in Section 26 05 33 wherever passage through any type of fire wall is required.

K. All cables must be terminated using a compression connection tool. All cables shall be installed using EIA/TIA 568, 569, 570, BICSI and standards as follows: Wire pair twists must be maintained to within ½" of IDC contacts on each jack, jacketing must be undamaged for the full length of the cable run and must continue to within ½" of IDC contacts on each jack, each end of each cable must be secured to the jack module with a velcro cable tie. Any cables damaged during pulling shall be the responsibility of the pulling party/parties (electrical contractor or LAN installer). Any failing or marginal tests (see above) shall be re-terminated, re-routed, re-tested, etc., until no other alternatives exist, at which time it will be assumed that a bad cable run (too much twisting of the cable, compression of jacketing and wire pairs, etc.) has resulted (at the discretion of the LAN Tester) and the pulling party/parties will have to bear the responsibility of re-pulling new cable to replace it.

L. The Contractor shall:

1. Provide raceway system as indicated. Open wiring is permitted within the tunnels provided plenum rated cables are neatly arranged and supported with J-hooks every 3 feet and in accordance with industry standards. Routing of cables in tunnels shall occur along sides of tunnels - stay away from center.
2. Provide category 6 cable from all computer outlets to IDF voice/data patch panels as indicated.
3. Provide fiber optic and copper backbone cables from IDF to MDF LIU patch panels as indicated.
4. Provide IDF panel enclosures.
5. Provide LIU fiber optic patch panel in IDF enclosure as indicated.
6. Provide category 6 voice/data patch panels in IDF enclosures and MDF rack as indicated.

7. Terminate all wires and fibers in all cables at both ends. Provide identification on all cables at both ends. Coordinate with Owner (if required) for actual connection points.
8. Provide all associated hardware as described above.
9. Active electronics are furnished by the Owner.
10. Category 6 patch cords and connection of those cords provided by Owner.
11. Provide drawings, patch panel documentation, full testing and required reports, and warranty all parts and labor (using newly installed cable tests as reference point) excluding outside physical damage or extreme conditions/circumstances.
12. At completion of pulling cable and making terminations, provide the owner with a complete as-built record drawing of the cabling system installation. Provide a hard copy booklet showing the arrangement of each terminal board, terminal block and the arrangement of the cables with each cable termination labeled.

3.2 TESTING

A. Cable Test

1. Perform cable tests in accordance with Cable Test set manufacturer's written instructions. All cables must pass at 100 Mhz.
2. Connect the NEXT test set to the cable to be tested at the centralized network location.
3. Correct malfunctions when detected and proceed with testing. Record test results on a standard UTP Category 6 Cable Test Results form. Contractor must guarantee the cabling meets EIA/TIA 568B performance specifications and the Leviton data system warrantee agreement for Spokane Public Schools.

B. Fiber Optic Test

1. All fibers shall be tested with a fiber optic OTDR at 850nm (on the reel before the Contractor accepts the product and after installation).
2. The documented test results from the F/O OTDR shall be given to the Owner to form a baseline for loss budget and future troubleshooting. The test (after installation) shall be performed with all connectors installed and show measurements from connector to connector. The fibers must test less than 1 db difference between the worst and best fiber within the cable.

C. Final Test

1. Verify network distribution signal to all installed outlets. Where any outlet does not receive the proper network signal, repeat Category 6 cable and termination tests to determine the source of the problem.

3.3 DELIVERABLES

A. As-built drawings to include the following:

1. 3 hard copies of drawings.
2. Floor Plan shall show jack and equipment locations with applicable ID numbers.
3. Drawings and diagrams (in AutoCAD format); provide files on CD-ROM media. AutoCAD floor plan backgrounds shall be made available from Owner for each site location.
4. Documented test results for installed system jacks, cabling, etc. noted in 3.02 above.
5. Leviton Certificate of Warranty.

**PART 4 – MEASUREMENT AND PAYMENT**

4.1 LAN – Data – Telephone is considered incidental to other items.

## SP22 Field Lighting Ground Installation

### PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This work consists of all components required to provide the trenching, conduit, wires, hand holes to connect the field lighting poles and field lights to the Musco control panel. Installation of the new Musco Control Panel and Replacement of existing circuit breakers with new in panel FL.

1.2 RELATED SECTION

A. Section SP9 – Common Works Results

B. Section SP10 – Low voltage Electrical Power Conductor and Cables

C. Section SP13 – Raceways and Boxes

D. Section SP15 – Panelboards

E. Section SP18 – Enclosed Switches and Circuit Breakers

F. Section SP20 – Field Sports Lighting

G. Section SP21 – LAN – Data – Telephone.

1.3 REGULATIONS

A. Codes and Ordinances: Comply with all applicable codes, ordinances and regulations including the National Electrical Code, NFPA, and all other national, state and local codes and ordinances. Notify the Engineer of any non-compliance in contract documents to applicable codes and regulations prior to installation of the work. Changes in the work after initial installation due to requirements of code enforcing agencies shall be at no additional cost to the Owner.

B. Permits: Provide and pay for all permits and fees required for this project. In addition to paying for all permits and fees, the Contractor shall be responsible for contacting the various Approving Authorities, arranging for review of shop drawings where appropriate, scheduling inspections in a timely manner, and making necessary corrections as required by the Approving Authorities.

C. Approving Authority: It is the Contractor's responsibility to ascertain and contact the appropriate "Approving Authorities" for this project. Approving Authorities will include, but not be limited to the electrical inspector and the Fire Marshal having jurisdiction.

D. Certificate of Inspection: Obtain a Certificate of Electrical Inspection from the local inspecting authority indicating final acceptance.

E. Safety Measures to be Taken: The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform his work. The Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Engineer to conduct construction observations of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

**PART 2 – NOT USED**

**PART 3 – NOT USED**

**PART 4 – MEASUREMENT AND PAYMENT**

GENERAL CONDITIONS

A. General electrical conditions per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of all electrical work for this project as shown on the Electrical Drawings specified herein. Includes where other divisions require electrical materials or installations comply with all applicable requirements herein to provide all electrical materials and installation work required to connect, test and operate equipment required by other divisions. Electrical installations required by other divisions but not shown on the electrical drawings shall be provided.

1. Bid Schedule Payment Reference: SP22.4.1.A.1
2. Bid Schedule Description:
    a. Field Lighting Ground Installation

**SP23 Baseball Field Improvements**

## PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This work consists of all components required to provide the trenching, conduit, wires, hand holes, panelboards, wiring devices to install all electrical device around the perimeter of the field turf.

1.2 RELATED SECTION

A. Section SP9 – Common Works Results

B. Section SP10 – Low voltage Electrical Power Conductor and Cables

C. Section SP11 – Grounding and Bonding

D. Section SP13 – Raceways and Boxes

E. Section SP14 – Identification

F. Section SP15 – Panelboards

G. Section SP16 – Wiring Devices

H. Section SP18 – Enclosed Switches and Circuit Breakers

I. Section SP19 – Enclosed Controller

J. Section SP20 – Field Sports Lighting

K. Section SP21 – LAN – Data – Telephone.

1.3 REGULATIONS

A. Codes and Ordinances: Comply with all applicable codes, ordinances and regulations including the National Electrical Code, NFPA, and all other national, state and local codes and ordinances. Notify the Engineer of any non-compliance in contract documents to applicable codes and regulations prior to installation of the work. Changes in the work after initial installation due to requirements of code enforcing agencies shall be at no additional cost to the Owner.

B. Permits: Provide and pay for all permits and fees required for this project. In addition to paying for all permits and fees, the Contractor shall be responsible for contacting the various Approving Authorities, arranging for review of shop drawings where appropriate, scheduling inspections in a timely manner, and making necessary corrections as required by the Approving Authorities.

C. Approving Authority: It is the Contractor's responsibility to ascertain and contact the appropriate "Approving Authorities" for this project. Approving Authorities will include, but not be limited to the electrical inspector and the Fire Marshal having jurisdiction.

D. Certificate of Inspection: Obtain a Certificate of Electrical Inspection from the local inspecting authority indicating final acceptance.

E. Safety Measures to be Taken: The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform his work. The Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Engineer to conduct construction observations of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

**PART 2 – NOT USED**

**PART 3 – NOT USED**

**PART 4 – MEASUREMENT AND PAYMENT**

GENERAL CONDITIONS

A. General electrical conditions per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of all electrical work for this project as shown on the Electrical Drawings specified herein. Includes where other divisions require electrical materials or installations comply with all applicable requirements herein to provide all electrical materials and installation work required to connect, test and operate equipment required by other divisions. Electrical installations required by other divisions but not shown on the electrical drawings shall be provided.

1. Bid Schedule Payment Reference: SP23.4.1.A.1
2. Bid Schedule Description:
    a. Baseball Field Improvements

## SP24 Phase II Electrical Preparation

### PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This work consists of all components required to provide the trenching, conduit, hand holes for future pathways to serve the phase II areas.

1.2 RELATED SECTION

A. Section SP9 – Common Works Results

B. Section SP13 – Raceways and Boxes

1.3 REGULATIONS

A. Codes and Ordinances: Comply with all applicable codes, ordinances and regulations including the National Electrical Code, NFPA, and all other national, state and local codes and ordinances. Notify the Engineer of any non-compliance in contract documents to applicable codes and regulations prior to installation of the work. Changes in the work after initial installation due to requirements of code enforcing agencies shall be at no additional cost to the Owner.

B. Permits: Provide and pay for all permits and fees required for this project. In addition to paying for all permits and fees, the Contractor shall be responsible for contacting the various Approving Authorities, arranging for review of shop drawings where appropriate, scheduling inspections in a timely manner, and making necessary corrections as required by the Approving Authorities.

C. Approving Authority: It is the Contractor's responsibility to ascertain and contact the appropriate "Approving Authorities" for this project. Approving Authorities will include, but not be limited to the electrical inspector and the Fire Marshal having jurisdiction.

D. Certificate of Inspection: Obtain a Certificate of Electrical Inspection from the local inspecting authority indicating final acceptance.

E. Safety Measures to be Taken: The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform his work. The Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Engineer to conduct construction observations of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

**PART 2 – NOT USED**

**PART 3 – NOT USED**

**PART 4 – MEASUREMENT AND PAYMENT**

GENERAL CONDITIONS

A. General electrical conditions per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of all electrical work for this project as shown on the Electrical Drawings specified herein. Includes where other divisions require electrical materials or installations comply with all applicable requirements herein to provide all electrical materials and installation work required to connect, test and operate equipment required by other divisions. Electrical installations required by other divisions but not shown on the electrical drawings shall be provided.

1. Bid Schedule Payment Reference: SP24.4.1.A.1
2. Bid Schedule Description:
    a. Phase II Electrical Preparation

## SP25 Cabling For Osprey Camera

### PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This work consists of all components required to provide the trenching, conduit, hand holes, Data Rack and cabling to provide Cat6 cabling and power to new Osprey Camera Location.

1.2 RELATED SECTION

A. Section SP9 – Common Works Results

B. Section SP13 – Raceways and Boxes

C. Section SP21 – LAN – Data – Telephone.

1.3 REGULATIONS

A. Codes and Ordinances: Comply with all applicable codes, ordinances and regulations including the National Electrical Code, NFPA, and all other national, state and local codes and ordinances. Notify the Engineer of any non-compliance in contract documents to applicable codes and regulations prior to installation of the work. Changes in the work after initial installation due to requirements of code enforcing agencies shall be at no additional cost to the Owner.

B. Permits: Provide and pay for all permits and fees required for this project. In addition to paying for all permits and fees, the Contractor shall be responsible for contacting the various Approving Authorities, arranging for review of shop drawings where appropriate, scheduling inspections in a timely manner, and making necessary corrections as required by the Approving Authorities.

C. Approving Authority: It is the Contractor's responsibility to ascertain and contact the appropriate "Approving Authorities" for this project. Approving Authorities will include, but not be limited to the electrical inspector and the Fire Marshal having jurisdiction.

D. Certificate of Inspection: Obtain a Certificate of Electrical Inspection from the local inspecting authority indicating final acceptance.

E. Safety Measures to be Taken: The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform his work. The Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Engineer to conduct construction

observations of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

**PART 2 – NOT USED**

**PART 3 – NOT USED**

**PART 4 – MEASUREMENT AND PAYMENT**

GENERAL CONDITIONS

A. General electrical conditions per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of all electrical work for this project as shown on the Electrical Drawings specified herein. Includes where other divisions require electrical materials or installations comply with all applicable requirements herein to provide all electrical materials and installation work required to connect, test and operate equipment required by other divisions. Electrical installations required by other divisions but not shown on the electrical drawings shall be provided.

1. Bid Schedule Payment Reference: SP25.4.1.A.1
2. Bid Schedule Description:
    a. Cable for Osprey Camera (Cat6 Cable, Trenching, Conduit, Data Rack)

## SP26 Electrical Utility Relocation

### PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This work consists of all components required to provide the trenching, conduit, and hand holes.

1.2 RELATED SECTION

A. Section SP9 – Common Works Results

B. Section SP13 – Raceways and Boxes

1.3 REGULATIONS

A. Codes and Ordinances: Comply with all applicable codes, ordinances and regulations including the National Electrical Code, NFPA, and all other national, state and local codes and ordinances. Notify the Engineer of any non-compliance in contract documents to applicable codes and regulations prior to installation of the work. Changes in the work after initial installation due to requirements of code enforcing agencies shall be at no additional cost to the Owner.

B. Permits: Provide and pay for all permits and fees required for this project. In addition to paying for all permits and fees, the Contractor shall be responsible for contacting the various Approving Authorities, arranging for review of shop drawings where appropriate, scheduling inspections in a timely manner, and making necessary corrections as required by the Approving Authorities.

C. Approving Authority: It is the Contractor's responsibility to ascertain and contact the appropriate "Approving Authorities" for this project. Approving Authorities will include, but not be limited to the electrical inspector and the Fire Marshal having jurisdiction.

D. Certificate of Inspection: Obtain a Certificate of Electrical Inspection from the local inspecting authority indicating final acceptance.

E. Safety Measures to be Taken: The Engineer has not been retained or compensated to provide design and construction review services relating to the Contractor's safety precautions or to means, methods, techniques, sequences or procedures required for the Contractor to perform his work. The Contractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Engineer to conduct construction observations of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.

**PART 2 – NOT USED**

**PART 3 – NOT USED**

**PART 4 – MEASUREMENT AND PAYMENT**

GENERAL CONDITIONS

A. General electrical conditions per lump sum. Includes furnishing all materials, equipment, labor, supervision, tools and items necessary for the construction, installation, connection, testing and operation of all electrical work for this project as shown on the Electrical Drawings specified herein. Includes where other divisions require electrical materials or installations comply with all applicable requirements herein to provide all electrical materials and installation work required to connect, test and operate equipment required by other divisions. Electrical installations required by other divisions but not shown on the electrical drawings shall be provided.

1. Bid Schedule Payment Reference: SP26.4.1.A.1
2. Bid Schedule Description:
    a. Electrical Utility Relocation, Conduit, Trenching, & Fees

## SP-27 - SITE FURNISHINGS

## PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Football Field Goals (C.F.C.I.)
   2. Football Security Netting (O.F.C.I.)
   3. Baseball Base Set (C.F.C.I.)
   4. Baseball Home Plate (C.F.C.I.)
   5. Softball Base Set (C.F.C.I.)
   6. Softball Home Plate (C.F.C.I.)
   7. Softball Pitching Rubber (C.F.C.I.)

1.2 DEFINITIONS

A. C.F.C.I. – Contractor Furnished, Contractor Installed
B. O.F.C.I. – Owner Furnished, Contractor Installed

1.3 RELATED SECTIONS

A. Special Provision 2 (SP2) – “Cement Treated Base (CTB)”
B. Special Provision 3 (SP3) – “Synthetic Turf Base Aggregate Base Courses & Drainage Systems”
C. Special Provision 4 (SP4) – “Synthetic Turf System”
D. Special Provision 5 (SP5) – “Synthetic Turf System – Alternate # 1”
E. Special Provision 6 (SP6) – “Chain-link Fence and Gates”
F. Section 701 – Concrete Formwork
G. Section 702 – Concrete Reinforcement
H. Section 703 – Cast-in-Place Concrete
I. Section 704 – Precast Concrete

1.4 ACTION SUBMITTALS

A. Manufacturers Product Data: For each type of product.
   1. Product data specification sheets including, but not limited to:
      a. Manufacturer
      b. Model Number(s)
      c. Color/Texture
   2. Provide manufacturers product data prior to actual field installation work.
   3. Shop Drawings:
      a. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work.

1.5 INFORMATIONAL SUBMITTALS

A. Anticipated lead time schedule for all site furnishings included in this and related sections.
   1. Approximate lead time for all products and anticipated delivery dates.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For site furnishings to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements. The Manufacturer shall have a current American Sports Builders Association (ASBA) Supplier Certificate of Distinction designation.

1.8 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects during shipping. Any defects shall be noted and reported to the Owner's Representative immediately. Replacements (if necessary) shall be immediately re-ordered, to minimize any conflicts with the construction schedule. Sound materials shall be stored above grade under protective cover or indoors to provide proper protection.

**PART 2 – MATERIALS**

2.1 FOOTBALL FIELD GOALS (C.F.C.I.):

A. Model #GP835HSH Hydraulically Hinged High School Football Goal Posts, Base Plate Mount and Accessories.
   1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
   2. Components:
      a. Single Base Plate Mount Gooseneck Support: Fabricated of (6") Schedule 40 Aluminum Pipe (6.625" O.D.), 5ft. Radius, 8ft. Offset.
      b. Base Plate Mounting Kit
      c. Crossbar: Fabricated of (6") Schedule 40 Aluminum Pipe 96.625" O.D.)
         i. Length: 23'-4" High School
      d. Uprights: Fabricated of extruded 6061-T6 Aluminum Tube (4" O.D.) with rigid wire loop welded to upper end.
         i. Length: 35ft.
      e. Powder Coated Finish: Color shall be Yellow
      f. Installation Package Consisting of the Following Components:
         i. Hydraulically Hinged Base Plate Mounting Kit.
         ii. Required Access Frame Kit:
            A. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
               1. Model #GPAFITRH (GP4570RH) Rotating & Hinged Access Frame with Infill Retainer System for Synthetic Turf Applications.
                  a. Include additional optional (#GPAFITRHC) Full Cover Plug, all aluminum construction with gasket seal.
      g. Included Accessories:

i. Directional Wind Flags
ii. Touch-up Paint (Powder Coat Finish Specific)
iii. Model Specific Hardware Kit and Installation Instructions

h. Optional Accessories: None

2.2 FOOTBALL SECURITY NETTING (O.F.C.I.):

A. The Owner will furnish football security netting to be installed by the Contractor.

2.3 BASEBALL BASE SET (C.F.C.I.):

A. SHAFIT – Schutt/Hollywood Anchor Access Frame Kit+ with Infill Retainer System for Synthetic Turf Applications. (Shall be used below 1st, 2nd, and 3rd Plates)

1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).

a. SHAFIT – Schutt/Hollywood Anchor Access Frame for Infill Turf:
i. Dimensions: 8-1/16”W x 8-1/16”L x 10”H
ii. Box: 1/8" (0.125”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
A. 1/8" (0.125”) Aluminum Construction
B. Integrated Synthetic Infill Turf Attachment Ledge
C. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
D. Anchor Base, Anchor Bolts and Anchor Spacer
E. 1” PVC Drain Stub for Positive Drainage Connection
iii. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:
A. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
B. Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others
iv. Assembly Hardware

B. SHIBL – Schutt/Hollywood Impact Base Set (Set of 3) for Synthetic Turf Applications

1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
a. SHIBL – Schutt/Hollywood Impact Base Set (Set of 3) for Synthetic Turf Applications, Model #SHIBL.
i. Premium, Professional Construction with Patented Chevron Design
ii. Regulation Size: 15” x 15” x 2-1/2”
iii. Includes (6”) Base Stanchions
iv. Ground Anchor Mounts: None
v. Base Plugs: None

2.4 BASEBALL HOME PLATE (C.F.C.I.):

A. SHAFIT – Schutt/Hollywood Anchor Access Frame Kit+ with Infill Retainer System for Synthetic Turf Applications. (Shall be used under Home Plate).
    1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).

        a. SHAFIT – Schutt/Hollywood Anchor Access Frame for Infill Turf:
            i. Dimensions: 8-1/16”W x 8-1/16”L x 10”H
            ii. Box: 1/8" (0.125”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
                A. 1/8" (0.125”) Aluminum Construction
                B. Integrated Synthetic Infill Turf Attachment Ledge
                C. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
                D. Anchor Base, Anchor Bolts and Anchor Spacer
                E. 1” PVC Drain Stub for Positive Drainage Connection
            iii. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:
                A. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
                B. Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others
            iv. Assembly Hardware

B. SHP-UM – Schutt/Hollywood MLB Universal Pro Style Home Plate for Synthetic Turf Applications
    1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
        a. SHP-UM – Schutt/Hollywood MLB Universal Pro Style Home Plate for Synthetic Turf Applications, Model #SHP-UM.
            i. Official Size Hollywood MLB Universal Pro Style Home Plate with (7”) Stanchion with (1) Ground Anchor and (1) Anchor Plug and (5) Zinc-Plated Mounting Spikes
            ii. 1-1/2” Thick
            iii. Permanent or Removable Installations
            iv. High Durability Molded Rubber Construction

2.5 SOFTBALL BASE SET (C.F.C.I.):

A. SHAFIT – Schutt/Hollywood Anchor Access Frame Kit+ with Infill Retainer System for Synthetic Turf Applications. (Shall be used below 2nd and 3rd Plates).
    1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).

a. SHAFIT – Schutt/Hollywood Anchor Access Frame for Infill Turf:
    i. Dimensions: 8-1/16”W x 8-1/16”L x 10”H
    ii. Box: 1/8" (0.125”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
        A. 1/8" (0.125”) Aluminum Construction
        B. Integrated Synthetic Infill Turf Attachment Ledge
        C. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
        D. Anchor Base, Anchor Bolts and Anchor Spacer
        E. 1” PVC Drain Stub for Positive Drainage Connection
    iii. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:
        A. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
        B. Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others
    iv. Assembly Hardware

B. SHAFPRIT – Schutt/Hollywood Dual Anchor Access Frame Kit+ with Infill Retainer System for Synthetic Turf Applications. (Shall be used below 1st Plate).
    1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
        a. SHAFPRIT – Schutt/Hollywood Dual Anchor Access Frame for Infill Turf:
            i. Dimensions: 6-1/16”W x 22-15/16”L x 10”H
            ii. Box: 1/8" (0.125”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
                A. 1/8" (0.125”) Aluminum Construction
                B. Integrated Synthetic Infill Turf Attachment Ledge
                C. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
                D. Dual Anchor Base, Anchor Bolts and Anchor Spacers
                E. 1” PVC Drain Stub for Positive Drainage Connection
            iii. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:
                A. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
                B. Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others
            iv. Assembly Hardware

C. SHIDB – Schutt/Hollywood Impact Double First Base Set (Set of 3) for Synthetic Turf Applications.
    1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
        a. SHIDB – Schutt/Hollywood Impact Double First Base Set (Set of 3) for Synthetic Turf Applications, Model #SHIDB.
            i. Premium, Professional Construction with Patented Chevron Design
            ii. One-Piece Molded Base
            iii. 30” x 15” x 2-1/2” with (4”) Stanchions
            iv. Includes (2) impact Bases and (1) Double First Base

2.6 SOFTBALL HOME PLATE (C.F.C.I.):

A. SHAFIT – Schutt/Hollywood Anchor Access Frame Kit+ with Infill Retainer System for Synthetic Turf Applications. (Shall be used under Home Plate).
    1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
        a. SHAFIT – Schutt/Hollywood Anchor Access Frame for Infill Turf:
            i. Dimensions: 8-1/16”W x 8-1/16”L x 10”H
            ii. Box: 1/8" (0.125”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
                A. 1/8" (0.125”) Aluminum Construction
                B. Integrated Synthetic Infill Turf Attachment Ledge
                C. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
                D. Anchor Base, Anchor Bolts and Anchor Spacer
                E. 1” PVC Drain Stub for Positive Drainage Connection
            iii. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:
                A. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
                B. Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others
            iv. Assembly Hardware

B. SHP-UM – Schutt/Hollywood MLB Universal Pro Style Home Plate for Synthetic Turf Applications
    1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
        a. SHP-UM – Schutt/Hollywood MLB Universal Pro Style Home Plate for Synthetic Turf Applications, Model #SHP-UM.

i. Official Size Hollywood MLB Universal Pro Style Home Plate with (7”) Stanchion with (1) Ground Anchor and (1) Anchor Plug and (5) Zinc-Plated Mounting Spikes
ii. 1-1/2” Thick
iii. Permanent or Removable Installations
iv. High Durability Molded Rubber Construction

2.7 SOFTBALL PITCHING RUBBER (C.F.C.I.):

A. SHAFPRIT – Schutt/Hollywood Dual Anchor Access Frame Kit+ with Infill Retainer System for Synthetic Turf Applications. (Shall be used below Pitching Rubber).
1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
a. SHAFPRIT – Schutt/Hollywood Dual Anchor Access Frame for Infill Turf:
i. Dimensions: 6-1/16”W x 22-15/16”L x 10”H
ii. Box: 1/8" (0.125”) Aluminum Construction, Welded Frame with Open Bottom Having the Following Attributes:
A. 1/8" (0.125”) Aluminum Construction
B. Integrated Synthetic Infill Turf Attachment Ledge
C. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
D. Dual Anchor Base, Anchor Bolts and Anchor Spacers
E. 1” PVC Drain Stub for Positive Drainage Connection
iii. Solid Cover: 1/8" (0.125”) Aluminum Construction with the Following Attributes:
A. Infill Retainer System with 1-1/4” (1.25”) Flexible Gasket Seals Specifically Designed for Synthetic Infill Turf Applications
B. Designed to Allow Synthetic Turf Material to be Adhered Directly to the Aluminum Surface with Appropriate Adhesive and/or Mechanical Fasteners as Determined by Others
iv. Assembly Hardware

B. Schutt/Hollywood Official Size Dual Stanchion Pitching Rubber for Synthetic Turf Applications. (Shall be used as Pitching Rubber).
1. As manufactured and supplied by Sportsfield Specialties, Inc. P.O. Box 231 41155 State Highway 10 Delhi, NY 13753 (888)-975-3343, (www.sportsfieldspecialties.com).
a. Schutt/Hollywood Official Size Dual Stanchion Pitching Rubber for Synthetic Turf Applications, Model #SHLBMPR224.

## PART 3 – WORKMANSHIP

3.1 FOOTBALL FIELD GOAL BASE MOUNTS AND FRAME KITS

A. All goal posts and accessories shall be installed as recommended per manufacturer's written instructions and as indicated on the drawings. Concrete

anchoring foundations to be determined by the Contractor per manufacturer recommendations based on local soil conditions.

3.2 FOOTBALL SECURITY NETTING

A. Football security netting shall be installed in accordance with the drawings and manufacturer's recommendations.

3.3 BASE SET ANCHOR ACCESS FRAME KITS

A. All anchor access frames for infill turf shall be installed as recommended per manufacturer's written instructions and as indicated on the drawings. Concrete anchoring foundations to be determined by the Contractor per manufacturer recommendations based on local soil conditions.

## PART 4 – MEASUREMENT AND PAYMENT

4.1 SECTION INCLUDES

A. Football Field Goals (C.F.C.I.) – Includes all labor, materials, and equipment to install football field goal posts and turf boxes. Includes survey, layout, excavation, footings, goal posts and anchoring system, turf box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.1.A
    2. Bid Schedule Description: Football Field Goals (C.F.C.I.)

4.2 SECTION INCLUDES

A. Football Security Netting (O.F.C.I.) - Includes all labor and equipment to install owner furnished, contractor installed football security netting. Includes attaching security netting to previously installed posts and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per lump sum.
    1. Bid Schedule Payment Reference: SP27.4.2.A
    2. Bid Schedule Description: Football Security Netting (O.F.C.I.)

4.3 SECTION INCLUDES

A. Baseball Base Set (C.F.C.I.) - Includes all labor, materials, and equipment to install baseball base sets and turf access boxes. Includes survey, layout, excavation, turf box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.3.A
    2. Bid Schedule Description: Baseball Base Set (C.F.C.I.)

4.4 SECTION INCLUDES

A. Baseball Home Plate (C.F.C.I.) - Includes all labor, materials, and equipment to install baseball home plate and turf access box. Includes survey, layout, excavation, turf box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.4.A
    2. Bid Schedule Description: Baseball Home Plate (C.F.C.I.)

4.5 SECTION INCLUDES

A. Softball Base Set (C.F.C.I.) - Includes all labor, materials, and equipment to install softball base sets and turf access boxes. Includes survey, layout, excavation, turf box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.5.A
    2. Bid Schedule Description: Softball Base Set (C.F.C.I.)

4.6 SECTION INCLUDES

A. Softball Home Plate (C.F.C.I.) - Includes all labor, materials, and equipment to install softball home plate and turf access box. Includes survey, layout, excavation, turf box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.6.A
    2. Bid Schedule Description: Softball Home Plate (C.F.C.I.)

4.7 SECTION INCLUDES

A. Softball Pitching Rubber (C.F.C.I.) - Includes all labor, materials, and equipment to install softball pitching rubber and turf access box. Includes survey, layout, excavation, turf box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.7.A
    2. Bid Schedule Description: Softball Pitching Rubber (C.F.C.I.)

4.8 SECTION INCLUDES

A. Baseball Foul Pole (C.F.C.I.) - Includes all labor, materials, and equipment to install foul pole and turf box. Includes survey, layout, excavation, footings, foul pole and anchoring system, turf box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.8.A
    2. Bid Schedule Description: Baseball Foul Pole w/ Turf Access Box (C.F.C.I.)

4.9 SECTION INCLUDES

A. Baseball Foul Pole (C.F.C.I.) - Includes all labor, materials, and equipment to install foul pole and access box. Includes survey, layout, excavation, footings, foul pole and anchoring system, access box setting, and all other required incidentals to install completely per plans, details, and specifications. Pay item shall be per each.
    1. Bid Schedule Payment Reference: SP27.4.9.A
    2. Bid Schedule Description: Baseball Foul Pole w/ Concrete Access Box (C.F.C.I.)

**END OF SECTION**

## SP-28 - CONSTRUCTION SURVEYING

### PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Field Engineering

1. **All construction staking is the responsibility of the Contractor.**
2. All stakes shall be set to the pertinent grades identified on the plans.
3. Upon request, the Engineer will provide the Contractor with the electronic design surface in XML format only and the electronic design geometry drawing in Civild3d 2018 format only.
4. Data conversions to other formats are the responsibility of the contractor.

### PART 2 - MATERIALS

2.1 Not Applicable

### PART 3 - WORKMANSHIP

3.1 Not Applicable

### PART 4 - MEASUREMENT AND PAYMENT

4.1 Construction Surveying shall be considered incidental to other items.